

Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

Commissioner of Conservation

AND

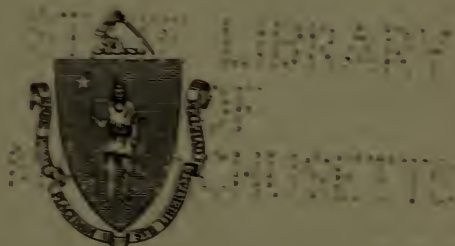
The State Forester and Director of Parks

FOR THE

YEAR ENDING NOVEMBER 30, 1933

Mass. DEPARTMENT OF CONSERVATION

(OFFICES: 20 SOMERSET STREET, BOSTON, MASS.)



APR 25 1934
The Commonwealth of Massachusetts

OUTLINE OF THE
REPORT OF THE DEPARTMENT OF CONSERVATION

The report of the Department of Conservation is divided for convenience and economy into four parts, as follows:—

- Part I. The organization and general work of the Department of Conservation.
- Part II. The work of the Division of Forestry and the Division of Parks. (Parts I and II are printed in this pamphlet: Public Document No. 73)
- Part III. The work of the division of Fisheries and Game. (Printed separately as Public Document No. 25)
- Part IV. The work of the Division of Animal Industry. (Printed separately as Public Document No. 98)

PART I.

ANNUAL REPORT OF THE COMMISSIONER OF CONSERVATION

The annual report of the Department of Conservation is herewith submitted. For details of the work of the Divisions of Forestry, Parks, Fisheries and Game, and Animal Industry, see special reports, Parts II, III, IV.

On March 23 an appropriation for emergency work to be used in employing needy persons was made by the Legislature. The amount for this year was \$75,000 and we put to work during April and May about 800 men. This number was reduced greatly in June and the smaller number of men carried through the year to November 30. In all, \$74,245.06 was expended in wages, the balance of the \$75,000 being required for tools.

On April 12 the Governor appointed Samuel A. York of Cummington to be Commissioner of Conservation and State Forester. This appointment was confirmed on April 21, and the new Commissioner sworn in on April 22. The Governor and Council later confirmed Mrs. Helen G. Talbot as confidential secretary to the Commissioner and she was later made Conservation Department Secretary.

The Legislature in April provided that the Director of Forestry should be also *ex officio* Director of Parks.

On January 6 Governor Ely appointed William D. Desmond to be inspector of Food Fish, replacing Arthur L. Millett. Mr. Desmond on May 26 was appointed by the Governor, Supervisor of Marine Fisheries, replacing Zenas A. Howes and combining under one head the two branches of the work.

By far the greater portion of the efforts of the Department of Conservation in 1933 have been devoted to the Emergency Conservation Work. Due to the unexpectedness of that program, it was impossible to prepare detailed plans beforehand, and a unified organization to carry them out. Nevertheless, it was felt that the opportunity for the development of our state forests should not be lost, and therefore the maximum number of camps we could locate on existing state lands was asked for and approved. Five thousand six hundred boys and 600 veterans were placed in thirty-one camps under the supervision of thirty-one superintendents and approximately 300 foremen; all of which supervisory personnel had to be recruited by the Department of Conservation in four to six weeks. At the same time methods for handling specific projects in each camp, purchase of equipment and administration had to be devised. It has naturally required more than ordinary efforts of the department and several months to weld such an organization into a smooth unit, but it has been done. Furthermore, at the present time plans have been made for future forestry and fire prevention work. Detailed landscape maps have been prepared for each area. In every case these plans are laid for work for several years ahead.

The work has fallen naturally into seven classifications: camp establishment, road building, silviculture, fire hazard reduction, pest control, recreation, and fish and game.

It should be remembered that in the carrying out of this program all concerned were dealing in most cases with not only under-nourished and under-developed boys, but boys who in the majority of cases had never known what it was to work. These factors seriously delayed our program until the boys could be conditioned.

Our work, therefore, has been unemployment relief as well as conservation. The several projects are classified as follows:

1. Due to the speed with which the Army moved the boys into the forests, neither camp sites nor camps could be prepared for them. The boys in every case had to move on to the ground, clear brush, grade the land, and erect not only their tent camp but the summer barracks as well. Nor were the tools and necessary equipment available until approximately a month after the camp was located.

2. As may be seen in the table summarizing projects under way in Part II of this report, a tremendous amount of road work was done during the summer and fall months. This consisted of normal repairs of existing main roads, repairs to old roads, the building of new ones where necessary. Much of this involved brush cutting, stump and stone removal, and stoning and graveling.

3. We were convinced that the camps would continue through the winter and therefore postponed most of the silvicultural work until frosts interfered with work on the roads. However, since the middle of July, at least twenty men in each camp have been detailed to the work of forestry thinning and improvement cuttings in order to accomplish not only this task but to provide wood for the camps. With the approach of winter, more and more men were placed on forestry work with the result that tremendous strides have been made in forest improvement.

4. A very considerable amount of work has been devoted for months to fire hazard reduction by cutting the brush along the roads to a depth of fifty to one hundred feet into the forest. Old piles of slash, release cuttings and fire traps have been burned on rainy days. In order to provide the maximum of water and fire breaks in case of fire, all water has either been conserved by dams, or plans have been drawn for such work wherever any source of supply has been found. These dams vary in size from a six-foot concrete box to a 400-foot dam flooding seventy-five acres.

5. Thousands of acres have been scouted and treated for blister rust and gypsy moths. One of the main projects west of the Connecticut has been the actual search for the gypsy moth between Berkshire County and the Connecticut River in order to create another barrier zone. When completed, every acre of woodland in the geographical belt will have been inspected.

6. At the very outset it was realized that there was no conflict between the use of trails for hiking and by fire trucks, nor was there any reason why ponds created for fire protection could not be used for fishing or for other recreational purposes. Consequently two landscape architects, Mr. Egbert Hans and Mr. Wayne Stiles were employed, one west and the other east of the Connecticut River, to conserve and develop the park areas of our state forests. It has been the immediate concern of these landscape architects to see that the aesthetic value of the roads was preserved, and that recreational areas around the ponds was developed for over-night camping or for other use by the public. In addition many beautiful trails to scenic spots, through exceptional groves, or by lovely brooks, have been built. Increasing emphasis on the recreational aspects of our state forests seemed timely, since recreation already is Massachusetts' second most important industry. Early in the summer, Mr. Hans and Mr. Stiles had discovered sufficient potentialities in our forests to warrant extensive developments along recreational lines for the benefit of the public. This aspect, in fact, seemed so important in the case of five state forests that they were placed under the supervision of the National Park Service. They were — Harold Parker Forest, Granville Forest, Windsor Forest, Mohawk Trail Forest and Pittsfield Forest. However, recreational developments were not abandoned in any of the other state forests. At the present time there is a staff of some twenty-five trained landscape architects in the Civilian Conservation Corps * camps under the direction of Mr. Hans and Mr. Stiles, and plans for future development have been drawn for each state forest to include not only trails and picnic grounds, but over-night cabins, auto camps, parking areas and swimming facilities.

7. While little has been done in the way of developing wild life in the state forests, surveys have been made concerning conditions, and some of the ponds created by the C. C. C. have been stocked with fish in preparation for the season of 1934. It is interesting to note that each survey though made on entirely different types of forest revealed the tremendous number of vermin and the comparative scarcity of beneficial wild life.

* Usually referred to as C.C.C.

The year 1933 has marked a closer cooperation between the Divisions of Forestry and Fisheries and Game. It has been realized that proper development of any forest area must consider not only fire protection and forestry, but recreation and fish and game management. One of the projects in one of the camps has been the creation of four fish propagation ponds from which ponds and lakes in the commonwealth and especially in state forests can be stocked. Fish and Game experts have surveyed our forests and have advised on certain projects in order that we may develop wild life as much as possible.

Since the C. C. C. has resulted not only in the rehabilitation of thousands of Massachusetts boys, but has given the opportunity to Massachusetts to create a state forest-park system, it is unfortunate that the present economic work in some of our forests is approaching exhaustion and unless sufficient additional acreage is acquired within the next three months, some of our camps will have to be transferred to other states where Massachusetts boys will do for other states what should be done for this commonwealth.

Last August the Legislature appropriated the sum of \$10,000 to permit the Department of Conservation to investigate the possible purchase of 20,000 acres of additional state forest land. We have investigated areas desirable for extension of present forest holdings and new areas in eastern Massachusetts where needed, and report that the following areas are available for immediate purchase at a price not to exceed \$5 per acre:

<i>Counties</i>	<i>Acres</i>
Plymouth	1,500
Bristol	5,050
Norfolk	1,500
Essex	1,000
Middlesex	4,000
Worcester	7,352

Total	20,402
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There are additional and desirable areas not listed above that can be purchased immediately at a price not to exceed \$5 per acre, in the following counties:

<i>Counties</i>	<i>Acres</i>
Franklin	7,568
Hampshire	7,912
Hampden	1,000
Berkshire	22,512
Total	38,992

STATE FORESTS

During the year 1933, 2,269.20825 acres were purchased for our state forests. These acres are distributed as follows:

<i>Name of Forest</i>	<i>Acres</i>
Brimfield	92.38
Boxford	460.1875
Chester-Blandford	151.
Clarksburg	40.
Colrain	28.63
Erving	108.
Federation of Women's Clubs	240.
Foxborough	15.
Harold Parker	201.88075
Martha's Vineyard	26.5
Oakham	53.25
October Mountain	58.49
Otis	43.24
Pittsfield	646.15
Savoy Mountain	20.
Shawme	38.5
Total	2223.20825

In August the final transfer of the Federation of Women's Clubs Forest to the State was made, and a suitable tablet at the entrance to the forest unveiled. The Commissioner formally accepted the gift on behalf of the Commonwealth in the presence of a large gathering of club women.

ACKNOWLEDGMENTS

The Commonwealth has been fortunate during the past year in having had the generous cooperation of informed citizens and organizations interested in the conservation and development of the natural resources of Massachusetts. It is impossible to name all who have been helpful, but I wish especially to acknowledge my debt to members of the Committee on Needs and Uses of Open Spaces, and to the Boston Chapter of the American Society of Landscape Architects.

PART II.

REPORT OF THE DIVISION OF FORESTRY

The thirtieth annual report of the State Forester and the first report of the Director of Parks is herewith submitted.

ORGANIZATION

SAMUEL A. YORK, *Commissioner, State Forester and Director of Parks.*

HELEN G. TALBOY, *Conservation Department Secretary.*

ELIZABETH HUBBARD, *Head Clerk.*

HAROLD O. COOK, *Chief Forester.*

D. C. A. GALARNEAU, *Forester in Western Massachusetts.*

FRANK L. HAYNES, *Forester, Land Purchase and Surveys.*

JAMES MORRIS, *Forester, Nurseries.*

ROBERT B. PARMENTER, *Forester, Extension Work.*

MAXWELL C. HUTCHINS, *State Fire Warden.*

GEORGE A. SMITH, *Chief Moth Suppressor.*

JOHN P. CROWE, *Supervising Fire Warden.*

District Fire Wardens

1. Lincoln Crowell, Sandwich
2. William Day, Wareham
3. John H. Montle, Fall River
4. James E. Moloy, Woburn
5. Joseph L. Peabody, Winchendon
6. Frederick R. Stone, South Sudbury
7. Charles L. Woodman, Oxford
8. Albert R. Ordway, Westfield
9. Verne J. Fitzroy, Shelburne Falls

Division Moth Suppressors

1. Walter F. Holmes, Buzzards Bay
2. Clarence W. Parkhurst, Wrentham
3. Michael H. Donovan, Beverly
4. John J. Fitzgerald, Haverhill
5. Frederick W. Marshall, Framingham
6. Harry B. Ramsey, Worcester
7. Grover C. Twiss, Holyoke

SALISBURY BEACH RESERVATION

During the year the state acquired Salisbury Beach at a cost of \$33,000. Immediately after the beach became a state reservation, a superintendent and four life guards were employed. The Department of Public Safety cooperated by delegating a squad of state police for service at the beach. Though little was attempted during the summer beyond maintaining order and safety, a noticeable increase in public interest in the beach was apparent. Thirty-three rescues were made, with only one fatality from drowning.

Twenty-seven acres behind the beach are now in the land court being acquired by the state for a parking space at a cost of \$14,000. A volunteer group from the Boston Chapter of American Society of Landscape Architects has prepared plans for the proposed future development of Salisbury Beach.

STANDISH MONUMENT RESERVATION

In the season of 1933 the number of visitors climbing the tower at the Reservation decreased considerably. Total receipts at the Reservation were \$557.16. This included \$23.76 received at the comfort station. More picnic parties made use of our tables and benches than ever before. The visitors included people from every state in the Union, but fewer than usual from foreign countries. The reason for this is obvious. The Tercentenary year, 1931, brought more visitors than we have had since 1926.

STATE FORESTS AND PARKS

By designation of the Governor the Commissioner of Conservation is the director of the Division of Forestry, and by Section 2 of Chapter 75 of the Acts and Resolves of 1933, the director of the Division of Forestry is also the director of the Division of Parks.

Since each State forest varies from every other State forest in its character and possibilities, and in its percentage of possible recreational area, this excellent change in the organization of the department has eliminated the necessity for rigid classification and has permitted the free development of potentialities of our State forests.

With no State appropriation available for the Division of Parks, the Emergency Conservation Work of the United States Government afforded the means for the development of a forest-park system. Due to these factors, the report which follows is that of the Commissioner, not only as Director of Forestry, but also as Director of Parks, with no attempt to distinguish between the two divisions.

During the winter the regular crews on the state forests carried on the usual winter work, largely in the line of thinnings and release cuttings. During March and April this work and that of planting was greatly increased by the appropriation of a special fund of \$75,000 to aid unemployment. In June after the planting season was over, the *Civilian Conservation Corps Camps (called C. C. C.) were established on the state forests, and from then on during the summer nearly all the time of our regular men was spent in assisting the officers and superintendents in charge of these camps. During the first two months when tools and trucks were lacking, our state equipment was used to help out on the camp work. After August these camps were on a self-sustaining basis and the regular state crews were moved to other forests where no C. C. C. crews were at work.

STATE FOREST REPORTS

Arthur Warton Swann State Forest

The experimental work being carried on in this forest was continued during the year. Seven acres of new plantations were established and ten acres of sprout hardwoods were cleared. Some thirty-five acres of older plantations were released, and eight acres of poor mixed hardwoods were thinned for the purpose of encouraging natural reproduction of more desirable species. Pine plantations covering 470 acres were scouted for *ribes* and 3,950 plants found and destroyed. A further experiment in the control of blister rust was tried by pruning infected branches on twelve acres of pine plantation. Weevil-control experiments were continued by banding leaders with tanglefoot and cutting and burning infested leaders, on five and one-half acres. The roads and trails were cleared of brush. The division of time spent on various projects was as follows: silviculture, including insect and disease control, fifty-four per cent; cordwood cutting eleven per cent; roads and trails nineteen per cent; buildings and miscellaneous sixteen per cent.

At the Winters place extensive repairs were made to the house and barn so that it could be used by the superintendent of Beartown and Sandisfield state forests. This work was done by Mr. Lambert's men and not by the Swann Forest crew. Only minor repairs were made at the Swann headquarters.

Ashburnham State Forest

As usual two men have been at work on the various parcels of land located in this town and the north part of Westminster. Slash disposal work occupied their time for a few weeks in North Ashburnham and then road clearing work on the Harrington lot in Westminster was started. About three-fourths of a mile of road was cleared and brush burned and some railroad fire lines cleaned up. In February the crew started work on the Packard-Lashua lots in North Ashburnham. This consisted of release-cutting plantations and natural stands, and cutting wolf trees and weeds on a parcel that will be planted next spring. In April five additional men were added to the crew and about five acres of land were cleared and 8,025 trees planted. In May the extra men were discharged and for a few weeks

*Reports on work done by these Civilian Conservation Camps follow after reports of state work on forests. They are headed "Emergency Conservation Work", with letter and number of camp following.

two men did blister rust work. In June a young forest school student was placed with the crew and most of our forest area in North Ashburnham was scouted for *ribes*. This was a check on our work done three or four years ago, and very few *ribes* were found. Two weeks were spent in gathering approximately four tons of moss for nursery work.

During the latter part of September the old county road leading from Astor House crossing to the Crocker-Lyons lot was opened up, all the rubbish burned and the stones moved where possible. This has been prepared for surfacing and it will give this forest area better protection from fires. In September the crew was cut to two men and they worked on releasing plantations on the Crocker-Lyons lots, covering about twenty acres.

Barre State Forest

On the Harding Hill lot an emergency unemployment crew continued the clearing of land, burned in 1929, for four weeks and later planted 10,000 red pine.

Beartown State Forest

During the spring an emergency unemployment crew of twelve men planted 50,000 Norway spruce, 8,000 white spruce, 2,000 red pine and 3,000 arbor vitae. During the summer the regular crew of ten men worked in conjunction with the C. C. C. crews, but in the fall with the help of two carpenters they remodeled the interior of the Winters house on Swann Forest, shingled and painted the outside and dug a cesspool. Some repairs were made to the barn as well.

Beartown State Forest

Emergency Conservation Work S-66

Previous to the establishment of the C. C. C. Camps on this area, Beartown Forest, one of the largest single blocks of state forest land in the state, was singularly inaccessible. Almost the first work assigned to this camp was the rebuilding of an old road which runs almost directly north and south through the forest. Four and eight-tenths miles of this road have been rebuilt. When fully completed this will greatly aid the better administration of this area and also will expedite the movement of fire apparatus. In addition to the above, two and two-tenths miles of forest road and one mile of highway, which serves as an entrance to the forest, have been maintained in cooperation with the town. The construction of roads within the forest has necessitated the installation of thirty-eight culverts and the construction of eight wooden bridges.

Eight water holes have been located and such construction work as was necessary has been done to make these usable. Roadside clearings have been made on two and one-half miles of road and the brush piled and burned. Three and one-half miles of fire breaks have been built. One hundred and twenty man days were expended in protecting the forest from fire. This includes patrol over dangerous sections, and extinguishing small fires when found.

Protection for existing white pine stands has been secured by the eradication of *ribes* over an area of two hundred and fifty-eight acres. For a permanent and adequate water supply a storage tank with a capacity of 5,800 gallons has been erected and all necessary pipe installed.

Beartown State Forest

Emergency Conservation Work SA-66

The two camps located on this forest have worked in close cooperation with each other, but as a unit this camp has completed the following work. A mile and a half of truck trails have been completed and added to the existing system of roads. Along three miles of roads all brush and unsightly trees have been cut and the resulting debris burned, or piled ready for burning during favorable seasons. In addition to this three miles of fire lines have been cut and fully prepared for use. One and three-tenths miles of trails have been built as part of a proposed system which will eventually lead to interesting points on the forest. The trails to be built will be a part of, and minor trails leading off from, the Appalachian Trail. One waterhole has been located and rebuilt suitable for use during the fire season.

In cooperation with Camp S-66 fourteen hundred eighty-eight acres of forest land have been systematically scouted for *ribes*. In all cases where they were found they have been eradicated.

Under supervision of the Sandisfield Camp a dam is being built for the creation of a lake which will serve the purpose of a rearing pond for fish as well as the nucleus of a recreational center. To date final surveys for this area have been made, 1,000 cubic yards of earth excavated and 285 cubic yards of concrete poured. Twenty-five cubic yards of rock fill have also been introduced.

Five acres of land have been selected for its value as a recreational area and an intensive work program has been initiated and carried out. Plans have been made for more extensive work on this area next spring. Five miles of telephone line have been completely built enabling the camp to keep in communication with the outside.

Brimfield State Forest

Only a small amount of work was done on this forest during the past year by state men. During the spring a crew of emergency unemployment men cleared the slash on the Goodrich lot and thinned about eleven acres of sprout hardwoods. They also constructed a dam on Deth Hill Brook to create a small pond for fire protection. This dam was afterwards enlarged by the C. C. C. camp men.

Brimfield State Forest

Emergency Conservation Work S-60

With the construction of good roads the fire hazard of any forested area is reduced, for the ease with which fire-fighting apparatus can be moved into an area coupled with the excellent fire line a road provides makes the control and suppression of fire a much easier problem.

To date six miles of forest road have been completed, which includes rock fill in necessary places, excavation and fill where needed and a top dressing of gravel. Nine additional miles have been built minus, however, the top dressing. Two and one-half miles of main camp road have been rebuilt and repaired. For assurance that adequate drainage will be maintained on these roads seven twelve-inch and three fourteen-inch culverts have been installed and six rock culverts have been built. Three bridges have had the stone abutments rebuilt and new plank laid.

Sixteen miles of roads and trails have been cut free of brush and the debris piled and burned.

A dam 60 x 15 feet has been built flowing back a pond with an area of approximately 90,000 square feet. This will serve the purpose of a large and reliable reservoir during the fire season. It also adds greatly to the beauty of the forest and will serve as the centre of a new recreational development. Three smaller dams 20 x 5 feet, of rock and gravel, have been built creating small pools used as water holes. Four other water holes have been built with an average diameter of thirty feet. Roughly one mile of trail has been completed to date and more work will be done on this project next spring. An area of three acres has been landscaped for recreational use providing the nature lover with opportunities to enjoy himself on an area which has hitherto been inaccessible and uninteresting to him. From the above projects a total of two hundred forty-five cords of wood have been cut and piled ready for use at camp.

Chester-Blandford State Forest

During the winter the district fire crew were employed on this forest. They thinned a seventeen-acre tract east of Sanderson Brook and cleared brush on the land of the railroad right-of-way. During the spring these men, supplemented by an emergency unemployment crew, planted 5,000 red pine on the land near the railroad, and 31,000 spruce on the Cole lot on the Blandford side of the forest.

In June and July the regular crew were engaged in helping the C. C. C. camp to become established. Through the remainder of the summer and fall they worked at the automobile camp-ground, removing stumps and rocks, grading trails, and making additions to the water system.

Chester State Forest

Emergency Conservation Work S-64

One and one-half miles of new road have been built on this forest. The old town road leading up Sanderson Brook to the Falls has been sufficiently widened and improved to allow safe travel. This rebuilt road will open up a new area for those interested in the natural beauties of our forests.

Roadside thinnings have been carried out on seventy-one acres. This operation has greatly reduced the fire hazard on this area and at the same time added a great deal to the attractiveness of the drive. Thirty-eight acres of land have been cleared of brush and prepared for planting in the spring. Fourteen and one-half acres of red and white pine plantation have been given a release cutting and the brush piled ready for burning. Forty-one acres of a distinctively high fire risk has been eliminated by cutting what material was necessary and piling and burning all resulting slash. Further protection from fire has been accomplished by the cutting out and clearing of brush on two and nine tenths miles of fire break. One mile of new trail has been cut which is a beginning on a well laid plan for future development of the forest from a recreational standpoint. From all the above operations over six hundred cords of wood have been cut and supplied to the camp. Seven hundred and eighty acres of this forest have been scouted for gypsy moth egg clusters.

Clarksburg State Forest

A small emergency unemployment crew working on this forest cleared out the Long Trail as far as the Vermont line, a distance of about three miles.

Colrain State Forest

An emergency unemployment crew pruned twenty-five acres of twenty-year-old white pine plantation and planted 9,000 red pine and 6,000 white pine.

Conway State Forest

An emergency unemployment crew in the spring brushed two miles of forest roads and planted 15,000 spruce.

Daughters of the American Revolution State Forest

In the spring an emergency unemployment crew cleared about twenty acres of brush pasture near the summit of More's Hill, and on this area planted 15,000 spruce. The regular crew of two men thinned out along the trail to More's Hill and finished thinning in the fire line along the boundary, a distance of about five miles.

D. A. R. State Forest

Emergency Conservation Work S-67

As well as working on this forest proper a regular detail of men has been released each day for work on the Mt. Tom Reservation.

At the D. A. R. State Forest seven-tenths of a mile of forest road has been excavated, stone based and top dressed with gravel. An additional four-tenths of a mile has been partially completed. One new bridge has been built permitting automobile travel to the shores of the upper lake. Eighteen and one-half acres of slash which resulted from improvement cuttings has been piled and burned. One and three-tenths miles of road have been freed of overhanging and inflammable brush which has been piled ready for burning during suitable weather. A heavy thinning has been made on approximately twenty-four acres of forest area. The trees of poor quality have been cut and saved for camp use. Twenty-eight acres of pine have been released and about one-half an acre of older pine has been given a pruning.

Carrying out a program which will be initiated on several of the forests a quarter-acre nursery has been prepared ready for seeding next spring. Roughly twenty-four acres of woodland which was in an unhealthy condition has been clear cut, and all wood of any value salvaged for camp use. Scouting for and suppression of gypsy moths was carried out on 1905 acres of this forest. Three areas of infestation were discovered and these were either treated with creosote or cut and burned. The main entrance to the forest has been greatly improved by the execution of a

well-designed plan of landscaping. Suitable trees and shrubs have been planted at the approach and the monument explaining the acquisition and purpose of the forest has been similarly treated. A total of one and one-half acres of land have been thus landscaped.

As an aid to the motorist 6,300 square feet of parking area has been cut out, leveled and graded ready for use next spring. By the construction of a sinuous road into the parking area no outward evidence is noticed of parked automobiles.

Mt. Tom Reservation

Always an attractive spot for nature lovers this area has been greatly opened up by the construction of three and eight-tenths miles of roads and three and seven-tenths miles of trails. Two water holes have been completed for the better protection of the area during fire seasons. Six-tenths of a mile of necessary stream improvement has been carried out which adds greatly to the natural beauty of the reservation.

Erving State Forest

The Erving crew did some work in releasing plantations at the rear of the nursery during the early part of December when weather permitted. In January the work of clearing the remaining burned area was started. This parcel was completed in April ready for planting. During the winter several attempts were made to get some of the Town Welfare Departments in this locality to assist in cutting the wood from this parcel, that they might have fuel for the needy. After a number of weeks the Town of Orange supplied four men and with the combined efforts of the regular crew the area was cleared and the town was the gainer by many cords of good hard wood.

In April the crew of four men started nursery work by taking out approximately 90,000 four-year stock, part of which was used to plant the burned area. Twenty-five thousand trees were planted this season. During planting season an additional crew was added under the emergency act, and with this help approximately 100,000 two-year red pines were transplanted. Considerable work was accomplished on repairs to the forest roads and clearing up fire hazards. The emergency crew was discharged in May and the regular crew cared for the weeding of nursery and forest fire work.

The Erving fire equipment was sent out to five fires, the two largest being in Bernardston and Phillipston. In June the crew did some preparatory work for Civilian Conservation Corps camp site. In July the crew started hand drilling and dynamiting stones along the forest roads at the three camps on the Wendell, Erving and Otter River forests.

During the month of September two men were busy mowing brush along the forest roads and cleaning up generally. October and November were spent in staking out the proposed roads and water holes on the Erving section and clearing up grey birch and weed trees in a plantation near the old county road at the rear of the nursery.

Erving State Forest

Emergency Conservation Work S-54

More efficient management of this forest has been made possible by the completion of four and six-tenths miles of forest roads. In addition about three miles have been maintained and a little over one mile partially completed. The road to Laurel Lake has been gravelled, ditched and culverts installed, making this recreational area more easily accessible.

The suppression and control of forest fires has been materially aided by the construction of three water holes, which entailed the building of two earth dams and one of stone and concrete. Out of several water holes established years ago, one has been completely repaired and another partially repaired. Also for a distance of about one mile along travelled roads, brush has been cut, piled and burned.

A total of 813 acres has been systematically scouted and cleared of *ribes*. The extermination of gypsy moth egg clusters has been diligently carried out on 371 acres. Twenty-four acres of waste land have been cleared of brush and prepared for planting next spring.

A combined total of 87 acres of plantation and natural stands have been given improvement cuttings of some sort with the end in view of a better grade of final product in a shorter length of time. A natural corollary of this is of course a much improved appearance of the stand. Approximately 600 cords of wood from the above operations (and others) have been saved and designated for use at the camp.

The interest of the nature lover has not been ignored. He has been provided with five acres of new picnic ground, which includes the necessary tables, fireplaces, refuse receptacles, and comfort facilities. A bird pool has been constructed to add to the attractions of the spot.

Federation of Women's Clubs State Forest

In April an emergency unemployment crew of seven men started release-cutting plantations along the Swift River section of the forest. In preparation for planting, much of the old slash in this region was burned or lopped, and 18,000 trees were planted. General clean-up work was done around the camp site and fireplaces. This included burning much rubbish and cutting dead trees.

The emergency crew was discharged in the latter part of May and no work was done on the forest until September when a crew from the Otter River forest constructed a comfort station.

Foxborough State Forest

A small crew of five men repaired about a mile of road and constructed three water holes. A thinning was made on about ten acres and 40,000 pines were planted. During the summer this same crew made release cuttings on reforestation lots in Berkley and Freetown, and made a thinning in the land surrounding the Acushnet tower.

Foxborough State Forest

Emergency Conservation Work S-75

Not all the work accomplished by this camp has been done on the State Forest. At this one camp an experiment is being carried out to determine the practicability of doing the same type of work in forested areas of nearby towns.

Three miles of forest roads have been built with a suitable rock base and top dressing of gravel. These roads have been built in such a manner as to open up new areas hitherto inaccessible for efficient management and fire protection. Approximately one hundred sixty-five acres of hardwood have been thinned and the cordwood resulting has been saved and assigned to the camp. Scouting and eradication of *ribes* on eight hundred fifty acres of state forest land has been completed. For further assurance that the *ribes* eradication carried out on state land will have its maximum beneficial effect, five hundred fifty acres of land adjacent to the forest have been given the same *ribes* treatment as the state land. In outlying towns of Canton, Mansfield, Plainville, and Foxborough and at key points on forest land a total of forty water holes have been established. These water holes should prove to be invaluable during the fire season. Following along with this method of fire control roughly five miles of fire lines have been completed in the towns of Sharon, Canton, North Attleborough, and Plainville.

For a distance of a little over two miles the bed and banks of the Ten Mile River have been cleaned in the towns of North Attleborough and Attleboro.

Harold Parker State Forest

From December to April the regular crew on this forest, consisting of three men, carried on thinning operations on ten acres, scouted 200 acres for gypsy moths and made some road repairs. For five weeks in April and May four emergency unemployment crews totaling about fifty men carried on construction work on the forest road from Haverhill Street to Salem Street, cleared ten acres of brush land east of Haverhill Street and thinned eighteen acres of mixed hardwoods and pine around the fish ponds.

During the summer and fall the regular crew worked in conjunction with the C. C. C. men, clearing the right-of-way for the new road across the Hill property and putting in a stone bridge and spillway over Skug River. Repairs were made on Salem Street on a stretch of two miles to make it fairly passable for our trucks.

Harold Parker State Forest
Emergency Conservation Work SP-5

The project which occupies the greater part of the time of this camp is wholly unlike that found at any other camp. Here the forestry and fisheries and game divisions have combined to plan, execute and supervise the construction of a series of four dams arranged in such a manner as to provide four separate rearing pools for fish. Combining the work accomplished at the so-called number 1 and number 2 dams we find the following work completed. One hundred eight cubic yards of ledge have been drilled, blasted and excavated. Two thousand seventy-six cubic yards of gravel and 350 cubic yards of screened sand have been used in the mixing of 1,060 cubic yards of concrete which has been poured. Eight hundred fifty-four cubic yards of earth have been moved and 6,710 cubic yards of fill made. In addition to the above twenty tons of reinforcing steel have been laid.

Four thousand feet of road have been completed which has required the excavation of 8,660 cubic yards of earth and 3,411 cubic yards of ledge by the use of dynamite. Culverts have been installed at twelve different locations. Preparatory to building bridges on this area 12,000 board feet of timber have been cut in the forest and hauled to the job. These will later be used when bridge construction begins.

Eight acres of land covered with inflammable brush have been cut, and the brush piled and burned. Ten cords of wood were salvaged and trucked to headquarters. Three water holes have been located and any construction work necessary to make them usable has been completed. At the entrance of the forest two large stone columns 5' x 5' x 11' have been erected.

Hopkinton State Forest

An emergency unemployment crew cleared eight acres of burned land on which 7,000 white pine were planted, and released about twelve acres of eighteen-year-old plantation from grey birch.

Hubbardston and Templeton State Forests

Two men worked on the Fredette lot in East Templeton during December and released a spruce plantation. During April under the emergency unemployment fund a six-man crew did some clearing of planting sites on the Hadley-Aiken lot in Templeton and planted 15,000 trees. This crew moved on to the Kendall lot in Hubbardston and planted 21,800 trees. The two regular men worked during the winter months upon the Wright lot in Hubbardston, release-cutting a white pine plantation, and when the emergency unemployment crews were added six men were placed on this lot to continue the releasing work. A few trees were planted in the larger open spaces, 4,000 being used in all. Some brush disposal work and pruning of crop trees was carried out during the short time the men were employed.

After the emergency unemployment crews were discharged the two regular men were placed on the Browning lot in Hubbardston and they planted a few trees on the open areas, also cleaned up brush along the town roadside which would have been a fire hazard. This included a strip of land seventy-five feet wide inside our boundary. During the summer months another one of the forest roads on the Kendall lot was opened up and the brush burned. The two men did considerable subgrading on the main road through the Browning lot. The stones were piled beside the road and later taken to the Otter River Forest for use on the dam at the Norcross-Beaman mill site.

In September these two men were transferred to Otter River Forest to assist on the work at the dam as they are both very capable men on stone masonry.

Huntington State Forest

An emergency unemployment crew planted 21,000 spruce in open fields on this forest during the spring.

Lancaster State Forest

In the spring a small emergency unemployment crew cleared the brush on eighteen acres of burned sprout land and planted 15,000 red pine and spruce on this area.

Leominster State Forest

During December, January and February the regular crew of three men carried on a thinning operation in a sapling hardwood growth on the Fenno lot. Work was suspended during March, but in April and May the regular crew supplemented by sixteen emergency unemployment men cleaned up an area of twenty acres of brush pasture south of Rocky Pond road, on which they afterward planted 20,000 white pine and spruce. They also planted 4,000 spruce in openings on the Fenno lot. When the C. C. C. camp was established in June the state crew suspended operations on this forest except for two weeks in November when they did some road brushing on the White lot.

Leominster State Forest

Emergency Conservation Work S-61

Apart from the work conducted on this forest proper, a group of men has daily been assigned to the Willard Brook State Forest in Townsend and Ashby for work there. Following is a report on the work accomplished on each area.

Work at Leominster:

The Leominster State Forest is fortunate in having a network of roads which cross it in such a manner as to divide it into convenient small areas for administration and protection. Three miles of this road is under construction and about one mile of it is recorded as completed. In the construction of these roads considerable drilling and blasting has been necessary. A tractor has also been employed for the hauling of rock and in grading. Sixteen metal culverts have been installed to date and credited to road construction. Along the so-called "Rocky Pond Road" (which is a part of the above construction) brush on either side of the road has been cut and burned as a means of reducing the fire hazard. One new water hole has been located, improved and added to the existing layout.

A total of two hundred twenty-nine acres of coniferous growth has been released, which includes areas planted to white and red pine and spruce. Brush resulting from the operation has been scattered and placed in close contact with the ground which will allow it to rot quickly.

In the camp area a small dam has been built, flowing back a small pond which for the present is used as a swimming pool. Later with the abandonment of the camp it will serve as a center of a recreational development. One mile of power line has been built in order that the camp may have a steady and reliable source of electricity.

Work at Willard Brook:

This small state forest has always had a well-deserved reputation as a beauty spot and recreational center for that section of the state. Accordingly the work carried on here has been more along the lines of a development of a recreational area. One mile of road has been completed and another mile and one-half is under construction. Additional work on these roads has called for the hauling of considerable gravel and the installation of about fifteen culverts. Roughly one mile of foot trail has been built and this will be extended in the spring. A small amount, about 500 feet, of very badly needed stream improvement has been made which has resulted in a much improved appearance of the recreational area. About 8,000 square feet of recreational or camp ground area has been cleaned and made ready for use. Thirteen acres of brush land which was a distinct fire menace has been cut, piled and burned. Release cuttings have been made on fifty-two acres of plantation. Thinnings have been carried out on twenty-five acres of forest land and five acres of medium-sized conifers have been pruned. The suppression of gypsy moths has been completed on 114 acres and all egg clusters found have been creosoted.

Marlborough State Forest

During April and May an emergency unemployment crew of twenty men made release cuttings and thinnings on both the Browne and Hansen lots, covering about twenty-five acres. A small amount of spot planting was done on the Hansen lot with 5,000 white spruce to fill in open spaces in older plantations. After the middle of May all work ceased on this forest.

Martha's Vineyard State Forest

The regular crew of three men, supplemented for a few weeks in the spring by an emergency unemployment crew of six, brushed out one and one-half miles of new fire lines, pulling stumps, plowing and grading. They also plowed twelve miles of fire lines previously cleared by the men from the C. C. C. camp. Ten miles of old fire lines were harrowed and three miles of road were graded.

During the winter 150 acres of pine plantations were released and in the spring 25,000 red pines, 25,000 white pines and 1,000 black pines were planted.

A well, lined with cement tile which was made on the forest, was dug for fire protection. All the older white pine plantations, both state and private, were scouted for white pine weevil.

Martha's Vineyard State Forest
Emergency Conservation Work S-57

The control of an extremely high fire hazard, ultimately reducing it to a satisfactory minimum, has long been the aim on this forest. To this end thirty-six and one-tenth miles of fire lines have been cut to an average width of thirty feet. Out of this total thirty-four and eight-tenths miles have been stumped, nineteen and four-tenths miles have had the brush piled and burned, and six and seven-tenths miles have been graded as a finished high type fire line. As a further reduction of fire hazard, three and three-tenths miles of brush cutting has been done along woods and trails, and the brush has been piled and burned. Release cutting in a plantation has been completed on eight and two-tenths acres. To supply power to the camp it has been necessary to cut a right of way for a distance of one and a quarter miles. The construction throughout has been done by the enlisted men supervised by the camp engineers and foremen. One quarter of a mile of telephone line has been strung. Fifty-six cords of wood were cut and hauled to headquarters for camp use.

The beautification or landscaping of the forest has been confined to an area of about four acres. At this time the work is only partially completed and plans are now being made for greater activity along this line in the spring.

Mohawk Trail State Forest

During the spring a crew paid from emergency unemployment funds cleared and prepared for planting about 150 acres of brush pasture, and later 120,000 spruce were planted on this area.

In the summer and fall the crew installed septic tanks at the auto camp toilet, thinned about ten acres of woodland and cleared two miles of trail. The camp grounds were cared for as usual.

The men at the C. C. C. camp accidentally started a small fire which was extinguished before it covered more than five acres.

Mohawk Trail State Forest
Emergency Conservation Work SP-6

Easily the most attractive state owned area in Massachusetts, this forest has received attention of a different sort from the other camps. The main thought here has been to beautify and make the area more accessible and more attractive to the visitor. To this end one and one-half miles of bridle path have been built to date. This is but a beginning in a more extensive program. One and eight-tenths miles of truck trails have been built, to enable the better administration of the area as well as aid in fire control. One rustic foot-bridge across the Cold River has been completed and immediately by its side will be a companion vehicle bridge across the same stream, this to connect with the truck trails, bridle path and a new recreational area. In construction this bridge is surely unique. All materials are obtained from the forest or made on the job. All timbers are cut and shaved on the forest. Drift pins are made by the company blacksmith. For flooring, timber squared by the use of a broad axe will be utilized. The rustic and pioneer effect is being carried out to the last detail.

Three-tenths of a mile of stream has been improved and along the stream two dams have been built, one with a length of 117 feet is 98% completed and the

other made of stone and 110 feet in length is fully completed. Fire breaks (lines) have been started and to date two-tenths of a mile have been built. Thirty-five acres of an extremely high fire hazard has been eliminated by burning brush and slash. Gypsy moth suppression has been carried out on 4,467 acres and all colonies found have been creosoted or otherwise destroyed. Several water holes have been built at vantage points over the forest and made more accessible by gravel roads and trails leading into them. Eight-tenths of a mile of telephone lines have been built to provide communication into the camp.

Monroe State Forest

Emergency Conservation Work S-69

Six and one-half miles of rebuilt road with a sound stone base and crushed rock surface layer have greatly minimized the danger of fire risk and at the same time made the forest more easily reached by the public. Approximately six and one-half additional miles have been made passable for trucks. Five hundred tons of crushed stone remain ready for use on roads in the spring. Three water holes with a total capacity of 10,500 gallons have been established at key points on the forest for aid in fire control. Along nineteen miles of roads the brush has been cut, piled and burned. At the same time undesirable trees along the same roads have been cut and the usable cord wood saved for use at the camp. Improvement cuttings have been carried out on a total of 200 acres. These cuttings include thinnings and weedings in hardwood, a small amount of scenic improvement cutting and the releasing of red and white pine plantations. Debris resulting from these cuttings has been piled and burned. From the above operations roughly 375 cords of wood have been saved and allocated to the camp for winter use.

Two dams have been built, one creating a gravity water supply for the camp and the other flowing back an area of approximately two acres, which is to be developed from a scenic point of view and used as a fish hatchery. A beginning has been made on a trail which is to parallel the course of Dunbar Brook and terminate in the upper reaches of the Deerfield River Valley. Vistas have been cut at advantageous points on the forest unfolding in panorama the incomparable beauty of the Berkshires.

Mount Grace and Warwick State Forests

During the winter two men from one of the survey crews did improvement work on the Emery lot on Northfield road, cutting out grey birch, red oak and maple wolf trees and ice-broken material of all sorts. This work netted considerable wood which sold for a fair price. During planting season the men planted 5,000 Norway spruce on the Emery lot and 6,000 red and white pine on the Tyler lot. At the conclusion of this work the survey crew returned to their usual work and no work was done on the forest areas until after fire season was over except for the policing of camp grounds in the "Gulf" which was done by the Observer from Mount Grace tower.

During August further work was done on the "Gulf" camp grounds. The following work was accomplished: two comfort stations, two stone fireplaces, a rustic bridge, new stone pavements around the base of two old fireplaces, water system installed at the three lower camps and considerable new area cleared of rubbish. All of the trails to the tower were opened.

During October three men were added to the crew and some of the old roads on the Tyler-Miner parcel were opened, besides the ones on the Barnes-Howe and Sampson lots. This work cleared approximately one and one-half miles of forest roads, as the brush was burned and refuse wood carted away.

Mount Greylock

Emergency Conservation Work SP-7

Originally the camp now at the Mt. Greylock Reservation was located at the Savoy State Forest. The transfer of the unit was accomplished during the later part of September and field work began early in October. The following data is divided into work accomplished on the two areas.

Savoy Mountain State Forest

Road construction immediately received attention from this camp and one and three-quarters miles are recorded as completed. This work has entailed the additional labor of building 3,100 feet of ditching and the installation of twenty-six culverts. Also two old wooden bridges in a bad state of repair have been completely rebuilt and made safe for travel by vehicles. Danger from fire on this area has been greatly reduced due to the disposal of the brush and dead and dying trees along six and one-quarter miles of road. All debris resulting from this operation has been piled and burned and wood suitable for use at camp (200 cords) saved. At two strategic points on the forest sources of water have been located and improved for use as water holes during the fire season. Plantations to the extent of twenty-five acres have been given a release cutting and all brush and refuse resulting piled and burned. Two hundred and eight acres of forest area have been scouted for *ribes* and where found have been systematically eradicated. Prior to abandoning this camp much time was spent by the enlisted men in preparing a site at Mount Greylock for their new location.

Mount Greylock Reservation

Because of its location, road repair and construction was begun at once and other projects initiated as progress on roads permitted. Two hundred seventy-seven cubic yards of fill have been used in the construction of roads and 69 cubic yards of stone base together with 50 cubic yards of gravel top dressing. Three new wooden bridges have been built and 1,000 feet of guard rail built along dangerous sections. During the road construction it was found necessary to drill, blast and excavate a total of 1,755 cubic yards of ledge. A snow fence for a distance of 700 feet has been built and later will be extended to protect all exposed road from drifts. For a distance of a mile along what is known as the "New Ashford Trail" brushing out and widening of the trail has been accomplished for the purpose of letting the trail serve as a fire line.

On a promising young spruce stand, six acres have been given a thinning, removing the undesirable hardwoods and dead or diseased spruce. Two hundred twelve (212) cords of wood have been salvaged for camp use. In order to lay out properly work for next spring, surveys have been made of projects contemplated. To date, a lineal survey of seven miles has been completed together with a traverse survey of eighty-five acres of land on which some winter work will be initiated.

Myles Standish State Forest

During the winter the regular crew worked at straightening the Wareham and College Pond roads, cutting and burning brush in preparation for the plowing and grading. Fifty acres of plantations were released, and four acres of oak coppice infested with gypsy moths were thinned and the brush burned. The tractor and two fire trucks were overhauled and put in condition for spring work.

During the spring the regular crew supplemented by men hired from the emergency unemployment appropriation planted 93,000 white pines, 102,000 red pines, 13,000 white spruce and 3,200 miscellaneous species. At the same time 16,000 red pine and 1,000 spruce were planted on the Jones River lot in Kingston, and 200,000 red pine seedlings were transplanted in the nursery. During the summer and fall the regular crew carried on maintenance work on forty miles of old roads, and nine and one-half miles of new roads, on which preliminary work had been done by the C. C. C. boys, were plowed and graded.

The barn roof was shingled and a new cesspool built. A large boulder was moved to the fire tower and a tablet mounted on it. The crew assisted in extinguishing eight fires, seven outside and one on the forest.

Myles Standish State Forest

Emergency Conservation Work S-56

Always an attractive spot for people living in eastern Massachusetts, the completion of approximately six miles of new forest road has added materially to the availability of the recreational facilities on the forest. The rapid movement of fire fighting equipment has been expedited by this road construction, and both

recreation and fire fighting have been simultaneously benefited by the repair of twelve and one-half additional miles of road. Three and two-tenths miles of foot trails have been cut through the woods and about some of the ponds, and at advantageous points along the trails vistas have been cut. Several new public camp lots have been completed ready for use next spring.

Brush cutting along rights-of-way of roads and trails, and that necessary in the cutting of vistas has been done on a computed area of 50.45 acres. Brush burning on the same area has been completed. The dead and fire-scarred trees on 725 acres, which represents part of a total area burned over several years ago, have been cut and the usable wood salvaged for camp use. One hundred ninety cords of wood have been supplied to the camp for its use. The appearance and condition of the nursery has been greatly improved by a small amount of general work and weeding. Thirty-two acres of forest land and plantation combined have had badly needed improvement cuttings, such as thinnings, weedings and release cuttings. Two miles of power line have been cut, the brush burned and a total of sixty-five poles cut, hauled and set in place. Four and a half miles of telephone line has been strung and sixty new poles cut, hauled and set in place. These new poles are partly replacements on the existing telephone line and partly for its extension to the camp.

A small detail of men have been utilized at the Standish Monument Reservation in Duxbury. Here a great deal of beautification work has been done. Approximately 350 cubic yards of loam has been trucked in and used for grading. Twenty-three yards of gravel have been used on roads and six loads of large field stone have been brought in and used in landscaping. Three acres of the large pine have been pruned which adds greatly to the beauty of the grounds.

Myles Standish State Forest

Emergency Conservation Work SA-56

Following along similar lines of work as in the other camp on this forest, six and one-half miles of road have been completed of which six-tenths of a mile have had a top dressing of gravel. In addition to the foregoing road work six and seven-tenths miles of road have been maintained and regraded, and approximately a mile of poorer road just barely passable for fire trucks has been completed. In order to provide communication with the camp by telephone one and eight-tenths miles of pole line right of way has been cleared, all brush disposed of, the poles set in place and the wire strung. Foot trails on this forest have always had a very popular appeal to hikers. Their needs have been met by the construction of seven and two-tenths miles of new trail, cut to a width of two feet. Approximately two acres of this area have been landscaped. Poorly shaped, diseased and dead trees have been cut, the brush cut, piled and burned, and the general appearance of this area, which will serve as a recreational center, greatly improved. Three new tennis courts have been built and two public camp lots improved.

The removal of brush and other inflammable material has been completed on a total of seventeen acres. Fifty-eight acres of forest area have had a thinning. Material from this operation that would be useful in camp has been saved and turned over to the camp for its use. Over 180 cords of wood have been salvaged from all operations and allocated to camp headquarters for its use in the kitchen and barracks. Over an area of 215 acres eradication of the white pine weevil has been carried out. This is accomplished by breaking off and burning all infested leaders. Also to protect the growth from blister rust 2,900 acres have been systematically scouted for *ribes* and where found these have been destroyed.

North Brookfield State Forest

On the Stone lot forest roads were brushed out and some release cutting done on the eighteen-year-old plantations.

Oakham State Forest

On the Ames lot fifteen acres were thinned and some small road repairs were made. On the Dean lot a pine grove near the state road was thinned out for a picnic ground and seven fireplaces installed. An old-fashioned stone well with a

sweep was also constructed. The Spencer Conservation Camp started construction of a dam and an eight acre pond to go with this camp site but the Metropolitan District Commission objected to this development because of its proximity to their Ware River water supply.

October Mountain State Forest

During the winter months the regular crew carried out roadside thinning operations chiefly along the Washington Brook and Bicycle roads. In April and May they were aided by an emergency unemployment crew of forty men who continued the roadside thinning and also cleaned up about twenty acres of brush pasture in preparation for planting. Later this plot and other areas were planted with 50,000 Norway spruce and 20,000 red pine.

Through the summer the regular crew spent most of the time on road maintenance, the heavy traffic incident to the presence of the Conservation camps causing much wear and tear to the roads. These conditions were intensified in September when heavy rains caused serious washouts, especially on the Washington Brook road.

Release cutting was carried on over an area of eighty acres of spruce plantations. Two chimneys in the reservation house were taken down and rebuilt and new sills placed under Honeymoon Cottage. Two new fireplaces were built at the picnic ground and a water supply installed.

October Mountain State Forest Emergency Conservation Work S-52

The October Mountain State Forest represents the largest single block of land under the supervision of this Department. In order to facilitate the proper management of this area an excellent system of roads has been built up in years past and with the advent of the C. C. C. considerable impetus was given to their maintenance and repair. Four and one-half miles have been rough graded and four miles of this have had a top dressing of gravel. Fifteen hundred yards of excavation have been made and one and one-half miles of stone fill put in place. Along this length of road a total of thirty culverts have been installed. During the early fall heavy rains in this region caused floods which washed out about a mile of the established road. This length has been repaired and in addition about a half-mile of stone fill has been made as a further assurance of security. In the immediate vicinity of the camp similar road work has been done which has required the use of 525 cubic yards of gravel and 1,050 cubic yards of rock fill. Both were hauled in from outside points.

As a means of reducing the fire hazard an area estimated to be forty-three acres has been cleared of brush and the brush piled and burned. Preparatory to planting next spring three acres have been clean cut of dead wood and brush. Inflammable material has been burned and the cord wood salvaged for camp use.

Improvement cuttings have been made on two and one-half acres and all debris disposed of. One small dam has been built flowing back an area which will be used as a water hole; also landscaped and utilized as a recreational center. Three-tenths of a mile of trail has been built to date along the stream — more will be done next spring. At several points over the forest, water holes have been built requiring 437 yards of excavation. One hundred twenty tons of rock have been utilized in their construction in addition to seventy-seven yards of clay and fourteen yards of concrete. An area of thirteen and one-half acres has been landscaped and made useful as recreation grounds. A short stretch of trail has been built following an approved plan. This will be greatly extended this coming spring.

October Mountain State Forest Emergency Conservation Work SA-52

In common with the other camp on this area attention was first given to roads. Roughly two miles of road have been rough graded and three and one-half miles have been resurfaced. In the construction of this length of road it was necessary to excavate 2,506 cubic yards of earth and further excavate 900 cubic yards of ledge. A total of 2,015 cubic yards of stone fill was made and twenty-three culverts

have been installed. Washouts caused by floods have necessitated the introduction of 655 cubic yards of stone fill and the hauling of 3,270 cubic yards of gravel for the repair of approximately one mile of road.

In and about the camp area other road work for easy access to the camp has been done which has accounted for the hauling in from outside sources of 94 cubic yards of gravel and 200 cubic yards of stone fill. Cutting, piling and burning brush as a means of reducing the fire hazard has been accomplished on nineteen acres. Forty-five acres of land unsuited for anything except reforestation has been cleared of dead wood and brush. Usable wood has been saved and assigned to the camp. Next spring this area will be planted.

Otis State Forest

On the Webb-Gorham block near the old Nash place an emergency unemployment crew planted 12,400 pines and 14,600 spruce. In the Webb pasture 3,000 pines and 2,700 spruce were set out. On the Peck lot along the state road this same crew made a thinning of a strip along the highway sixty feet wide and five-eighths of a mile long.

Otis State Forest

Emergency Conservation Work S-63

One mile of forest road has been stone-based and top-dressed, an additional mile-and-a-half is under the process of construction. Along three-quarters of a mile of road, brush has been cut and burned. Sixty acres of land which had an old growth of dead and down chestnut has been cut, the best of the wood salvaged and all slash on the area piled and burned. Thinnings have been completed on twenty-five acres of forest land. Trees of poor form and others of little or no commercial value either now or later have been removed from the stand, allowing the trees of a better form and more valuable species to occupy their rightful place.

A total of 1,828 acres have been systematically scouted and treated for gypsy moth egg clusters. Likewise 546 acres have been carefully scouted for *ribes*. Wherever found they have been pulled up and disposed of.

Considerable time and labor has been expended on an earth dam which is roughly 180 feet long and 25 feet high and 85 per cent completed. A report from the engineers shows that approximately a 75 acre pond will be created by this dam. A total of 134 cubic yards of concrete have been poured and 1,500 cubic yards of earth fill have been used in its construction.

The pond will be utilized both for its recreational value and as a fish rearing pond.

Otter River State Forest

During December, January and February a two-man crew did considerable release-cutting work on the Scotch pine plantations in the Whitcomb section of the forest. This work was interspersed with brush disposal work when weather conditions would permit. Stormy weather was spent in preparing timber for a comfort station which was later built at the Petersham forest. Some changes were made in the forest fire equipment and the outfit made ready for spring work.

In April an emergency unemployment crew of ten men was added to the regular crew and work was begun on the planting and nursery jobs. One hundred fifty thousand young trees were taken from the nursery and 450,000 two-year stock were planted in the transplant beds. Eight thousand fifty trees were planted in the field.

In May all but four men were discharged and those retained worked in the nursery, weeding and keeping the place in shape. This work continued until some time in August.

The forest fire season was very tame this year and our records show less than fifteen calls answered. One of these was for a fire on our Otter River Forest which burned twenty-five acres of Scotch pine plantation near "Stones Crossing."

Otter River State Forest

Emergency Conservation Work S-63

Approximately seven miles of forest roads have been given a suitable base, provided with adequate drainage and made ready for a top dressing. Two and

one-half miles of forest roads have been suitably gravelled and working in co-operation with the Town of Winchendon one and one-half miles of town road adjacent to the forest have been given the same treatment. Along six miles of roadway inflammable brush has been cut, piled and burned; dead, dying and damaged trees cut and such wood as was usable salvaged for the camp. In addition to a well established system of water holes scattered at vital points over the forest, two new sources of supply have been located and made available for use.

Ribes eradication has been carried out on one hundred ninety-five acres of forest land on which a total of 62,026 bushes were destroyed.

One small concrete dam has been completed flowing back a medium-sized pond which will be utilized as a fish pond and also as a nucleus for an entirely new recreational area. This work will be continued along accepted plans next spring. One hundred five acres of forest land have been given improvement cuttings. Approximately one-half of this area, in a hardwood growth, has been given a thinning, and a stand of pine has been thinned and pruned. A small acreage has been cleared, the brush piled and burned ready for planting.

Some work has been done around the state forest nursery principally in weeding and improving the general appearance of the surrounding grounds.

Peru State Forest

Emergency Conservation Work S-74

Since good roads enable the better handling of all other projects it is natural that they would receive almost immediate consideration. To date four and three-tenths miles of road have been grubbed, two and three-tenths miles have been rock filled and two and one-tenth miles have had a top dressing of gravel. Six log stringer bridges with rock abutments have been constructed. Thirty culverts have been installed, twenty of which are stone masonry and ten corrugated iron. One water hole has been built and another is 50% completed. Along five and eight-tenths miles of roads the brush and undesirable trees have been cut, the brush piled and part of it burned during favorable seasons and the usable wood saved for camp use. A particularly dangerous area of five acres has had the brush cut, piled and burned.

Two dams have been completed, one with stone masonry, earth-fill and a concrete cover, which has a length of fifty-seven feet and a height of eight feet; and another built of stone with an earth fill whose length is twenty feet and height two feet. Both of these dams are to be used in impounding water for the formation of lakes, which will be utilized both for their recreational value and for the rearing of fish. A pond site of approximately sixteen acres has been surveyed and staked out which will be clean-cut and flowed next year. Preparatory to planting next spring three and eight-tenths acres of brush land have been cleared and the brush burned.

Forty-two and three-tenths acres of a mixed hardwood stand approximately twenty-five feet high and six inches in diameter have been thinned. The cordwood salvaged from this cutting together with that resulting from other operations has totaled 344 cords and has been allocated to the camp. Scouting and eradication of *ribes* was carried out on 660 acres of land. Along with this project weeviled tips of white pine have been cut and burned on the same area. On two thousand forty-four acres of forest land the scouting and suppression of gypsy moth has been conducted.

Pittsfield State Forest

In the early spring an emergency unemployment crew cleared about thirty acres of burned sprout land and planted this area with 25,000 red pine and spruce. A water hole was established below Lulu Cascades by the construction of a brush and earth dam, but when the C. C. C. camps were formed this dam was replaced by a larger and more permanent structure of rocks and earth.

Pittsfield State Forest

Emergency Conservation Work SP-8

Prior to the establishment of a permanent camp on Mount Greylock, a detail from this camp was released each day for work on that reservation. Work accomplished by this camp at Mount Greylock will be treated first, followed by work done on the Pittsfield State Forest.

Work at Mount Greylock

Exactly one mile of road has been built by this camp. Greater attention was given to recreational possibilities and viewed from this angle we find seven and one-half miles of trail completed, four vistas cut and four rustic bridges constructed. Fourteen acres of land has been cleaned of brush and weed species preparatory to planting next spring. Sixteen cords of wood were saved from the operation and trucked to the Summit House.

Work at Pittsfield Forest

Three and three-tenths miles of forest road have been completely rebuilt and made usable by automobile. For a distance of fifteen and one-half miles combination hiking and ski trails have been built, providing a double recreational value for the outdoor lover. Using existing old roads as a base, roughly nineteen miles of fire breaks have been constructed. This has been accomplished by brushing out the old road bed and then clearing away inflammable material from both sides of the road for a short distance. All brush is piled and burned. Twenty acres of land which was a distinct fire hazard has had the brush piled and burned. Next spring this area will be planted. Along one of the main roads for a distance of about a mile unsightly trees and brush have been cut and burned. On ninety-five acres of forest land improvement cuttings have been made, divided about evenly between releasings and weedings. From the above operations 374 cords of wood have been obtained and assigned to the camp.

Recreational areas have received their share of attention. Sixteen acres of land has been carefully treated with a well developed plan in mind of creating such a spot. One mile of stream improvement has been done and seven small rustic bridges built. Three additional acres of land have been landscaped purely for its beauty; and unique among recreational facilities is the construction of a temporary dam for a swimming pool. Later this will be replaced by a concrete dam. Another dam flowing back an area for the camp water supply has been built; with the abandonment of the camp this will be utilized for recreational purposes.

Sandisfield State Forest

During the spring a part of the Beartown crew planted 300 arbor vitae on the Hartsorn lot and released ten acres of plantations on the same lot.

Work was commenced on graveling a road on the Hoyt lot, but when the C. C. C. camp was established on the forest the work was turned over to the camp, and no further state operations were carried on.

Sandisfield State Forest

Emergency Conservation Work S-71

This forest has been made much more accessible by the completion of three and one-half miles of new road. They have been provided with an accepted rock foundation finished off with a gravel top dressing. The elimination of an extremely high fire hazard has been accomplished by the removal and burning of brush on an area calculated at fifteen acres. This includes the work done along the highway and along the shores of a lake which has been created.

A total of fifteen acres of forest land have been given improvement cuttings which include thinnings, weedings, release cuttings and prunings. The brush resulting from these operations has been burned. A small amount of cordwood has been saved from the above operations and this together with what has been obtained from other operations makes a total of 300 cords of wood provided to the camp for its use. Approximately twelve hundred fifty acres of this forest have been scouted and *ribes* eradicated for a more efficient control of blister rust.

To this camp has been assigned the duty of supervising and constructing a dam at Sandisfield and the supervising of the construction of a dam each at Otis and Beartown State Forests. The dam at Sandisfield will flow back an area of from twenty-five to thirty acres and will, in addition to its attraction for the camper and nature lover, serve as a rearing pond for fish. One hundred two cubic yards of concrete have been poured and one thousand cubic yards of earth fill have been used in its construction, which represents roughly sixty-five per cent of the material

required for completion. At Otis an area of about 75 acres will be flooded. On this project one hundred thirty-four cubic yards of concrete have been poured and fifteen hundred cubic yards of earth-fill utilized. This also will be used for recreational purposes as well as for the rearing of fish. An area of approximately twenty acres will be flooded by the dam at Beartown. On this dam two hundred eighty-five cubic yards of concrete have been poured. In common with the other two this pond will also be used for its recreational value as well as fish rearing possibilities.

Savoy Mountain State Forest

During the winter the fire observer and one man pruned twenty-five acres of pine plantations and released fifty acres of natural and planted spruce from overtopping hardwoods. During the spring an emergency unemployment crew set out 40,000 red pine, 50,000 Norway spruce and 20,000 white spruce.

Savoy Mountain State Forest Emergency Conservation Work SA-70

Immediately after establishing this camp attention was directed to road construction. A total of two and one-half miles of roads have been built, two miles of which have been stone-based. Along this finished road and along proposed roads for a distance of about four and one-half miles the brush has been cut, piled and burned, greatly reducing the fire hazard and at the same time adding much to the general appearance of the roads. A dam has been built across a small brook running through the forest. The pond made by flowing back will be used as a beginning on a recreational area. Fireplaces will be built and tables are to be provided. Following a carefully thought out and developed plan more work of this nature will be undertaken next spring.

Improvement cuttings have been carried out on a total of two hundred eighty-six acres. This includes weedings, thinnings and release cuttings. A small nursery (one-quarter acre) has been prepared and made ready for seeding in the spring. From all above operations a total of 433 cords of wood have been cut, saved and assigned to the camp for its use.

Ribes eradication has been carried out on 351 acres of forest land resulting in the destruction of 7,850 currant bushes. Twenty-one hundred and thirteen acres have been thoroughly covered by a crew of men in gypsy moth suppressive work. All clusters found were creosoted.

For a distance of 3,450 feet along Gulf Brook a winding foot trail has been cut and three rustic log bridges have been built spanning the brook. By the building of better roads into this forest and the development of the small recreational area together with the foot trail mentioned above, a new area hitherto little known and almost wholly inaccessible has been made available to the public.

Shawme State Forest

During the winter the regular crew constructed one mile of new fire line and brushed four miles of old lines and four miles of forest roads. In April and May they were supplemented by an emergency unemployment crew of twenty-five men who released twenty-five acres of young plantations and planted 123,000 Scotch pine, 16,000 red pine, 2,400 spruce, 72,000 white pine and 4,000 Japanese black pine in the burned area south of the headquarters house. Four hundred thousand trees were transplanted into the nursery.

At headquarters a new stone and cement garage was constructed and a pit for greasing cars. Some pruning was done in pine plantations on the Weeks lot, Sandwich, and on the Crowell lot in Yarmouth. The crew assisted in extinguishing six fires in five towns.

Shawme State Forest Emergency Conservation Work S-58

Eleven and one-half miles of road have been completed; stumps along the roadside dug, and all brush resulting from the operation as well as that along the right of way has been cut, piled and burned. In the construction of these roads, it has been necessary to build 1,060 feet of retaining wall for a fill of 84,904 cubic feet. A proposed system of roads for a distance of five and one-half miles has been

stumped, brushed and burned and 1,447 tons of ledge removed preparatory to their completion. An additional mile and a half of road has been surveyed and staked and the plans completed ready for work in the spring. Two miles of telephone line have been constructed into camp, making communication with the outside possible.

Considerable work has been done on the forest nursery which has added greatly to its appearance and productiveness. Twenty-seven hundred trees have been set out along the forest boundary. Three acres have already been planted and an additional thirty-seven and one-half acres have been prepared for planting in the spring. The brush resulting from this operation has been piled and burned and sixty-one cords of wood saved for camp use. A release cutting has been made on three acres of coniferous plantation and two bushels of seed collected for planting in the nursery next year.

Shawme State Forest

Emergency Conservation Work SA-58

In order to reduce as much as possible the extremely high fire hazard which exists in the eastern part of the state, road building was the first project undertaken by this camp. Approximately five and one-half miles of truck trails have been fully completed. With the addition of this mileage plus that contemplated it will greatly facilitate the more rapid movement of fire-fighting equipment. Two water holes have been established. Roadside clearing for fire prevention has been carried out on about twelve miles of road. Brush and other inflammable material has been piled and burned. In addition to the above, one and one-half acres of land which in itself was a fire hazard has been cut-over and the brush piled and burned. One mile of fire line has been built and more has been planned for next spring. Four acres of plantation have been released and the brush disposed of. An area of three acres selected as a recreation center has been cleaned of unsightly material and made ready for use next spring. Plans are now under way for more work on this same project with the arrival of good weather.

A total of sixty-eight days have been expended on the state forest nursery, largely in weeding and improving the appearance of the site. A detail from the camp has collected a total of ten bushels of pine cones. These will be dried and the seed extracted and seeded into the nursery next spring.

Plans have been made for the erection of a steel observation tower on the so-called Telegraph Hill and to this end an acre of land has been cleared of all growth preparatory to its construction. Surveys are now under way for new roads and work to be undertaken next spring. Plans will be drawn and submitted for approval.

Shutesbury State Forest

Very little work was done upon this forest during the year just ended. In April a small crew of four men was put at work release-cutting planted and natural stands of white and red pine. This occupied their time for a few days and when trees were delivered from the nurseries 4,000 trees were planted on the "Cutter Sheep Pasture" lot. The crew moved to the "Macedonia" section of the forest and cleared away ice-broken trees from the roads and made preparations to do some planting. Eighteen thousand white pines were planted on the open areas. All work was discontinued the latter part of May due to lack of funds.

Spencer State Forest

On the Young lot a small dam previously constructed was strengthened and two miles of road brushed out and repaired, and two plantations of white pine were released. A plantation of forty acres on the Dimock lot was released. On the Chestnut Hill lot a twenty-year-old plantation of ten acres was thinned and pruned and a site on Thompson's Pond was prepared for the C. C. C. Camp.

Spencer State Forest

Emergency Conservation Work S-55

Upon the establishment of this camp immediate attention was given to road construction. Since that time six miles of new road have been built and of the

existing road three miles have been repaired and surfaced with gravel and about one mile has been maintained. This road work has required the installation of nine culverts and two bridges. Along eight-tenths miles of roads and trails the dangerous fire hazard caused by brush has been completely eliminated by cutting and burning. Notwithstanding the fact that a great deal of time and effort has been devoted to the building of roads and the reduction of fire hazards it has been possible to treat silviculturally several acres of forest land. Eighteen acres have been given a thinning and eighteen additional acres of coniferous growth have been systematically pruned.

A detail from this camp have been working at the Barre State Forest where a salvage cutting is being made on a badly burned area. Fifteen acres have been clear cut and many more acres remain to be treated in the same manner. This whole area will be clean cut, the best of the cord wood saved and the site prepared for planting. From the above improvement cuttings a total of 283 cords of wood have been assigned to the camp for its use.

Beautification of this forest area has received its share of attention. One-half mile of forest trail, together with one foot bridge has been built. A suitable bathing beach at the lake where the camp is located has been created and the shore about the beach for a distance of 600 feet has been improved. This together with a nineteen acre camp ground improvement and roughly one-half acre of grading is an excellent beginning toward the completion of a carefully planned recreational area for public use. The balance of this project will be started with the arrival of good weather. As a means of outside communication nearly a mile of telephone line has been completely cleared and constructed.

Sutton State Forest

An emergency unemployment crew thinned ten acres of hardwood growth along Purgatory Brook and planted 3,000 pines in open places.

Tolland-Granville State Forest

During the winter the regular crew of two men worked clearing brush along the main road, and pruning in some of the older plantations on the Granville section of this forest.

In the spring these men aided by a small emergency unemployment crew planted 15,000 spruce and released eighty acres of young plantations. During the summer the trails and roadsides were cleared, the picnic ground at Hubbard River was improved, and some repairs were made at both the McGrannis and Coe houses.

In the Tolland section the fire observer mowed the brush on the trail to the tower for a length of two miles, and over a three-mile stretch he cleared the trail along which the telephone line runs.

Tolland State Forest

Emergency Conservation Work S-73

One-half mile of main highway leading to the forest has been rebuilt with a solid stone base and a top dressing of gravel. An additional half mile of forest road has received the same treatment. A total of 986 cubic yards of gravel and 615 cubic yards of stone have been used in the above operations. One and one-quarter miles of fire-break have been cut and cleared and two and one-quarter miles of fire trails have been opened up and cleaned of brush. These fire-breaks and trails will greatly aid in the control of fires and the transportation of fire-fighting equipment. Two and one-half miles of roadside have been cleared of brush by cutting and burning. Broken, diseased and damaged trees have been cut and the usable wood transported to camp for use. Three hundred fifty cords of wood have been cut, and furnished to the camp since its establishment.

Gypsy moth suppression has been carried out on 830 acres of forest land, and 1,126 acres have been scouted and eradicated of *ribes* for the control of blister rust. In order to provide telephone communication to the camp it has been necessary to cut a right of way for a distance of one and one-half miles. The brush has been piled and burned. The poles for the line were cut on the forest and the line strung by the camp crew.

Granville State Forest
Emergency Conservation Work SP-4

Access to this forest from the main highway has been made much easier by the completion of two miles of graveled road with a rock base of from twelve to thirty inches. An additional mile of road has been given a rock base and is now waiting for a top dressing of gravel. Five hundred twenty-four cubic yards of broken stone remains on hand ready for use in the spring.

Sixteen miles of fire trail have been cut and rebrushed, allowing the more rapid moving of fire pumps, men and hose during the fire season. Five miles of fire hazards along the roadside such as brush have been piled and burned, and undesirable trees cut and salvaged or burned. Six water holes have been deepened, rebuilt and made easily accessible by well-cleared trails.

Twenty acres of unhealthy forest land have been clean-cut, the brush piled and burned and the larger wood salvaged for use at camp. Sixty-eight acres of forest area have had undesirable and unhealthy trees removed, the wood saved as far as practicable for camp and the brush burned. Ten acres of white, red and Scotch pine have been pruned. A total of 550 cords of wood have been salvaged for use at camp.

Ribes eradication for the control of blister rust has been carried out on 3,700 acres of forest land. The detection and extermination of gypsy moth egg clusters has been completed on 1,079 acres of suspected and potential breeding areas.

Five miles of scenic trail from the highway along brooks to and paralleling with Hubbard River have been completed. Along this winding trail ten rustic log bridges have been built, three large vistas cleared unfolding hitherto unsuspected bits of beauty. For the length of the trail, guard rails have been provided at dangerous spots. A reasonable amount of strictly landscape work has been done to enhance the beauty of the trail. Nine camp sites have been cleared and prepared for public use, and three good-sized parking areas have been cleared and leveled for the motorist.

Field engineering has been completed on two sites, three bridges, two large camp sites and three dams. These project plans were considered, discussed and approved ready for work next spring.

Wendell State Forest

The regular crew of three men worked upon the "Lock" lot during the early part of December, releasing plantations of Scotch pine and cutting out grey birch wood along the edges. By this cutting several cords of good fire wood were obtained, which sold very readily to local citizens. Due to heavy snow and the road conditions the work was shifted to the New England Box Company lot near Wendell Depot. The crew continued to work on this lot most of the winter and when conditions allowed release-cutting of planted stock occupied their time. During the bad snow conditions the crew cleared up many dead, ice-broken and wolf trees which were cut into fuel wood and sold. Most of this material was grey, black and yellow birch and a few soft maples. This work cleared up several acres of land suitable for planting.

In April, four additional men were added under the emergency act and they planted 19,000 spruce, 6,000 white pine, and 2,000 red pine, a total of 27,000 trees. At the conclusion of this work the extra men were discharged and the three-man crew started the clearing of a camp site for the Civilian Conservation crew. During the next few weeks this crew did considerable work of a preparatory nature in and about the section where the camp was to be located.

In June the crew started enlarging the water hole in the Baker Hill section. Three of these holes were made into small ponds and we can now be assured a good water supply in case of fires. The crew started drilling stones along the forest roads, which had been a menace for years. This work occupied their time until October when they began cleaning up the road sides. Later they staked out proposed forest roads and water holes. There are now some twelve to fifteen water holes planned and about eight miles of new forest roads staked.

Wendell State Forest
Emergency Conservation Work S-62

A decided improvement to the existing net-work of roads on this forest has been the rebuilding of five and three-tenths miles of roads suitable for trucks and automobiles. These roads have been regraded, ditched and about 6,000 cubic yards of gravel hauled and used for a top dressing. About seven-tenths of a mile of road required the additional treatment of a suitable rock base. Forty culverts have been installed of which twenty-six are steel, eight stone, three plank, and one a pole culvert. To facilitate the handling of automobiles during the summer season, several parking areas have been built with a combined area of 1,350 square yards. A retaining wall with a linear distance of 572 feet has been built. An old dam originally used to flow back a mill-pond and which for years has been in bad repair has been repainted, cement-faced and capped. A pond of about 20 acres has now been flooded by the dam. This will add greatly to the forest's recreational possibilities. The bed of the brook flowing out of this pond has been cleaned for a distance of 600 feet. Two bridges have been completely repaired and made safe for automobile traffic. In addition to the many water holes established years ago, two new sources of water supply have been located and the necessary work done to make them of use during the fire season. An estimated total of ten acres of brush which has resulted from improvement cuttings, roadside cleanings and road building, has been piled and burned. Ten acres of plantation have been weeded thereby eliminating undesirable species of trees and allowing those remaining to make a more favorable growth. Selective crown thinnings have been carried out on ten acres of more mature stands. Twenty-seven acres of forest land which was supporting a growth of undesirable trees and brush has been cut clean and the brush burned. Approximately 350 cords of stove wood was obtained from this operation and it has been turned over to the camp for its use.

On five acres of hardwood area an intensive project was carried out for the suppression of the gypsy moth. Trees having particularly heavy infestation were cut and destroyed and other egg clusters where they were not quite so abundant were creosoted. Due to the fact that this camp is located at some distance from any sizable community it has been necessary to string nine and two-tenths miles of telephone wire in order to provide communication to the camp.

Willard Brook State Forest

During the period from December to March the regular crew worked at thinning operations largely on the Blanchard lot taking out dead chestnut which were cut into poles, posts and lumber for our own use.

In March sixteen emergency men were added to this crew and they cleared ten acres of burned brush land for planting and carried on thinning operations along the brook.

Twenty-five thousand spruce and pine were planted during the spring. In the summer and fall the regular crew carried on construction work, built four tables for the picnic grounds, shingled the Hosmer house, and installed an excellent water system for the house and overnight campground by building a cement tank at the Hayes spring and piping it to those locations. Several additional fireplaces were constructed and a small nursery for growing native plants was laid out.

Windsor State Forest

State work on this forest was confined to the planting of 35,000 spruce by an emergency unemployment crew in the spring.

Windsor State Forest
Emergency Conservation Work SP-9

Two and three-quarters miles of new road has been constructed which will add greatly to the accessibility of the forest for both administration and those who seek out the forest for recreation purposes. Included in this road building are 4,000 feet of rockfill and 6,500 feet of well gravelled surface. In addition to this, one highway bridge having a length of thirty-five feet has been constructed. Scattered over the forest at advantageous points eleven water holes have been located

and made available for use during the fire season. Two hundred and fifty-five acres of coniferous plantation have been released and the resulting brush piled ready for disposal during favorable seasons. An additional fifty-eight acres of larger growth have been thinned and all debris from the operation piled and burned. Scouting and suppression of gypsy moths has been carried out on two hundred acres of this forest. All infestations found have been creosoted. From all above operations a total of three hundred five cords of wood have been salvaged and assigned to the camp for use.

Few of our state forests are favored with the natural beauty that can be found on this forest, namely the Windsor Jambs, whose beauty is said to rival that of the celebrated Flume in Franconia Notch. Extensive beautification work has been done here. The hemlock grove at the upper end of Jambs has been cleaned of dead, dying and misshapen trees and the better remaining trees have been pruned. Tables and fireplaces have been repaired for the use of outing parties. A trail winding along one bank of the gorge has been cut out and a secure cable strung for its full length as a safety measure. At advantageous points along the trail observation points are provided, constructed out of logs and made thoroughly safe for use by the installation of a wire cable whose iron uprights are securely imbedded in rock. The trail continues for the length of the Jambs and then leaves it to follow the course of a small brook back to its starting point. Along this brook several small dams have been built flowing back small pools of water for beautification as well as fire protection. A new parking area is under construction, whose capacity will be much greater than the old one and at the same time eliminate the unsightliness of parked cars about the area. Further work on this area will be begun next spring following a well laid plan.

PRESENT ACREAGE OF STATE FORESTS
November 30, 1933

<i>Name of Forest</i>	<i>Acreage</i>
Arthur Warton Swann	986.75
Ashburnham	1,530.555
Barre	582.125
Bash Bish	390.08
Beartown	7,713.43
Boxford	460.1875
Brimfield	1,702.2325
Campbell's Falls	2.6
Chester-Blandford	2,305.8
Clarksburg	2,138.15
Colrain	1,244.424
Conway	1,716.12
D. A. R.	1,020.
Erving	5,047.8275
Federation of Women's Clubs	950.55
Foxborough	677.2412
Harold Parker	1,618.42075
Hawley	2,410.7
Hopkinton	108.
Hubbardston	973.87
Huntington	441.
Leominster	2,034.5063
Marlborough	173.
*Martha's Vineyard	4,472.75
Mohawk Trail	5,419.86745
Monroe	4,116.68
Mount Grace	1,065.825
*Myles Standish	8,869.
Nantucket	133.
Northfield	235.4875
Oakham	881.8

* Includes takings.

PRESENT ACREAGE OF STATE FORESTS — (Continued)
November 30, 1933

<i>Name of Forest</i>	<i>Acreage</i>
October Mountain	13,861.09
Otis	3,456.05
Otter River	1,827.06
Oxford	28.7
Peru	1,973.5
Petersham	207.35
Pittsfield	1,893.43
Royalston	146.02
Sandisfield	3,974.59
Savoy Mountain	8,689.18
*Shawme	8,370.12
Shutesbury	948.36
Spencer	650.525
Sutton	362.7715
Templeton	640.625
Tolland-Granville	4,682.25
Warwick	1,787.95
Wendell	5,244.85
West Brookfield	132.
Westminster	342.45
Willard Brook	643.88375
Windsor	1,450.05
Worthington	412.
Unassigned	1,093.325

* Includes takings.

124,240.10995

RECORD OF WORK DONE BY C. C. C. CAMPS
Year ending November 30, 1933

Project and Unit of Measurement:

- *Brush Land Cut and Burned, 343.8 acres.
- Bridle Path, 1.5 miles.
- Bridges — number of: Foot, 25; Vehicle, 25.
- Culverts — number of, 325.
- Camp Sites — number of, 20.
- Dams — number of: Small, 22; Large, not completed.
- Fire Lines, miles 90.
- **Improvement Cuttings — acres: Releasing, 794.7; Weeding, 294.7; Thinning, 581; Pruning, 39.5; Salvage Cutting, 400.
- Insect and Disease Control — acres: Blister Rust, 14,895; Gypsy Moth, 15,736; Weevil, 215.
- Lookout Towers, 1 Site.
- Nursery Sites, 1.
- **Parking Areas, 20.
- **Power Lines, 4.25 miles.
- Roads — miles: Completed, 122.3; Under Construction, 30.3; Maintained, 31.9.
- **Roadside Cleaning — miles, 123.1.
- Retaining Walls — linear feet, 1,632.
- Reinforcing — Steel, 20 tons.
- Seed Collection, 10 bushels.
- Stream Improvements, 5 miles.
- **Telephone Lines, 26.05 miles.
- Tennis Courts, 5.
- **Trails (Foot), 49.2 miles.
- Waterholes, 100.
- **Wood for Camp, 7,611 cords.
- **Vistas, number of, 20.

* Prepared for spring planting.

** Resulting debris piled and burned.

NURSERIES

The sale of planting stock again fell off considerably during the season of 1933. We sold less than 300,000 against a peak of 1,538,612 in 1927. This was due largely to economic conditions. It was offset to some extent by increased plantings on our own reservations.

Small sites have been set apart at Mohawk Trail, Windsor, and Goshen on which, this spring, will be set out a number of small trees of the various species we produce in order to give visitors to the reservations some idea of the type of stock we use in reforestation.

The 1933 distribution was as follows:

Sale	297,600
Town Forests	305,800
State Departments and Institutions	331,870
State Forests	1,340,348
Total	2,275,618

EXHIBITS

The annual forestry exhibit at the Eastern States Exposition illustrated the work of the Civilian Conservation Corps. The main feature occupied a space thirty-seven feet long and twelve feet deep and contrasted a State forest before the establishment of the C. C. C. camp and after the work in the forest was completed. A background painted by Mr. Egbert Hans, portrayed a distant mountainous country which blended into the foreground. With the use of the stereomograph, the story of the C. C. C. was told by pictures of the work in progress.

The distribution of the camps on State forests was shown on a large relief map of Massachusetts. A section of a State nursery with its beds of trees of different ages was the main feature on one side. This was the most extensive exhibit ever undertaken by the Forestry Division, and it was estimated that over 175,000 people saw the exhibit during the week.

The model of the C. C. C. camp used in the exhibit was loaned to State Forester Howes of Connecticut to place in one of his exhibits, and this was later displayed in store windows in several Connecticut towns and cities.

For other exhibits see the report of the Extension Forester.

TYPE SURVEY

In 1933 type survey data was gathered on the Foxboro Forest and additions to the Blandford, Brimfield, Granville, and October Mountain Forests, amounting to 3,363.63 acres, bringing the area of state forests covered by original forest type surveys to a total of 85,821.97 acres.

ANNUAL REPORT OF THE EXTENSION FORESTER

During 1933 the Extension Forester has seen very satisfactory results from his work. It is always gratifying to find evidences of interest in the Forestry project, because of its important role in the farm business. This year many means have been employed to continue the interest of woodland owners. Correspondence on every phase of the subject increased this past year which shows that more and more thought is being given to the woodland. The Extension Forester was called upon to visit 100 farms to give advice on planting, thinning, weeding, and pruning, and to estimate standing timber. He also held 20 demonstrations, set up 4 roadside demonstration plots and assisted in the roadside beautification contest sponsored by the Boston Herald. A questionnaire was sent out to the entire forestry list and some interesting information was obtained. From records in the State Forester's office it was found that 55 individuals had planted 115,250 trees. From the questionnaire it was found that 65 individual farmers had thinned 1,355 acres of their woodland; and in connection with this project, 31 of these had pruned 256 acres of pine to produce clear lumber which commands a high price. It was also found that 41 cooperators had weeded 735 acres. He assisted in 4 H Forestry Club work. He gave lectures to 6,870 people, both with slides and motion pictures, and he attended 19 conferences and met 812 people.

At Farm and Home Week at Amherst a very interesting and instructive forestry program was held. The speakers included Hugh P. Baker, President of Massachusetts State College, who spoke on "Land Utilization," Samuel A. York, Commissioner of Conservation, who spoke on "The Policy of the Conservation Department," R. P. Holdsworth, Professor of Forestry, Massachusetts State College, who spoke on "Roadside Forestry," and J. Harry Rich, a practical forester and land-owner who gave his experiences in "Managing the Farm Woodlot."

Following the indoor program a chopping contest was held. Two men were chosen to represent Massachusetts at the New England chopping contest held at the Eastern States Exposition. These contests created immense interest and forestry was given a great amount of publicity.

A publication entitled, "School Forest Suggestions," was prepared and sent to all women's clubs and the conservation chairmen. Very helpful information to those establishing these school forests is contained in this publication. With school forests to work on, it is hoped that many juniors will become interested in the subject of forestry and carry on some of the regular projects laid out in club work. Many demonstration plots were visited and a tour was held to visit some of the best ones where thinning, weeding and pruning were shown. On this tour there were 20 interested woodland owners. Some of the older demonstration areas have been enlarged by the owners. Gradually our farm woodland is being given more and more attention.

A large forestry exhibit was set up at the Brockton Fair which portrayed the recreational use of our State Forests. This is one of the projects undertaken by the C. C. C. boys. At this exhibit information regarding the work of the Department of Conservation was given and many bulletins were handed out.

This year there were 23 forestry clubs formed and many of the individual members have accomplished excellent results on the farm woodland. Growth studies are being made, family sugar bushes have been improved, 3,723 currant and gooseberry bushes on 695 acres have been eradicated, and considerable planting was done. All this work has been the means of interesting the parents in forestry.

The Extension Forester has been actively engaged in getting history-making pictures of progress made in the C. C. C. camps. He has given a series of lectures at the camps and has aided some of the foresters in educational program work.

Altogether the past year has seen rapid strides being made toward the production of better timber and much better use being made of our forest land.

REPORT OF THE SUPERINTENDENT OF MOTH WORK

MR. SAMUEL A. YORK, *Commissioner*

SIR:— Conditions as a whole over the state are much worse than last year. We warned you last year that if municipal appropriations were not made sufficient to do the necessary creosoting in the winter, and the spraying in the spring, the feeding would be heavy and the defoliation would be serious. We stated that southeastern Massachusetts and Cape Cod would suffer most, and the facts have borne out this prophecy. The heavily infested area has spread to the westward, and occupies now part of Worcester County, and areas still farther west. Amherst, Hadley, Northampton and Westfield, along the Connecticut River, showed the results of bad infestations. In the fall, work was done in Westfield and Hadley, with the object of cleaning out these colonies entirely. Cutting and burning were the methods used. Amherst and Northampton are in process now of being cleaned out thoroughly.

Unless considerable pressure is brought to bear upon the infested cities and towns to make them appropriate sufficient money to do necessary work in 1934, conditions will be much worse next year.

The brown-tail moth is generally present through the central and eastern sections of the state. With the exception of Plum Island infestation, the conditions are not severe but general, and not such as to cause alarm. By scouting and cutting and burning webs, this insect is always controllable. Much stress is placed each year on keeping the brown-tail from increasing, and in that way we have succeeded in holding it in check.

The elm leaf beetle was prevalent in different sections of the state, the orchard tent caterpillar was numerous last spring, also the fall web worm in the summer and early fall. The oriental hag moth has spread to some extent.

The work on the north shore was carried on as usual, under direction of the office, the North Shore Committee, Town of Manchester and City of Beverly contributing money to the work. There was no stripping in the woodlands there.

In the latter part of November, a Civil Works Project was begun, in 223 towns and cities in the state, east of the Connecticut River. About 1,350 men were put to work creosoting gypsy moth egg clusters in heavily infested woodland, where no work would otherwise be done on account of insufficient funds. This project is entirely handled in our office, and the men paid each week by check. This work will of course contribute something to the campaign of controlling the gypsy moth, but we cannot expect 100% efficiency, or believe that it should in any way mitigate the necessity of appropriations to be made in 1934, for the state work or for the towns and cities. The appropriation made for this C. W. A. Project was intended to help the cities and towns in their unemployment and welfare problems.

Following this report are special reports from A. F. Burgess, in charge of moth work of the Federal Government, and C. W. Collins, Senior Entomologist for the United States Department of Agriculture, in charge of the laboratory at Melrose Highlands, Mass.

Respectfully submitted,
G. A. SMITH,
Superintendent.

NATURAL ENEMIES OF THE GYPSY MOTH, BROWN-TAIL MOTH, AND SOME
OTHER FOREST AND SHADE TREE PESTS IN MASSACHUSETTS
C. W. Collins, U. S. Bureau of Entomology

Jan. 15, 1934.

Collections and observations were made by the Melrose Highlands, Mass., station of the U. S. Bureau of Entomology during 1933 in certain designated areas in New England to determine the percentages of eggs, caterpillars, and pupae of the gypsy moth killed by its important insect enemies. Similar investigations have been made in most of these areas, each of which is made up of approximately 10 acres of woodland, since 1929. Seventeen of the areas are in Massachusetts. A comparison of the figures obtained in 1933 with those secured in 1932 show that on the whole there was a reduction in 1933 of the percentages of eggs, caterpillars, and pupae destroyed by the parasites (*Anastatus disparis* Ruschka, *Ooencyrtus kuvanae* How., *Apanteles melanoscelus* Ratz., *Compsilura concinnata* Meig. and *Sturmia scutellata* R.D.) and the predacious beetle (*Calosoma sycophanta* L.). Most, if not all of the species of insect enemies concerned, were however present in greater numbers during 1933 than in 1932; the reduction in percentages of eggs, caterpillars and pupae destroyed by the parasites and the predacious beetle being due to a large increase in the gypsy moth infestation, in the areas.

Hibernating brown-tail moth larvae taken from webs out in 20 towns in Maine, New Hampshire, and Massachusetts during the winter of 1932-1933 and dissected showed an average percentage of parasitization slightly below that secured from similar collections obtained the previous winter. About 25 per cent of the larvae were attacked by four species of parasites (*Apanteles lacticolor* Vier., *Meteorus versicolor* Wesm., *Sturmia nidicola* Towns., and *Compsilura concinnata* Meig.) of which the tachinid fly, *Sturmia nidicola*, was the most important. Full-grown larvae collected during the summer of 1933 in the same states also showed that parasitization was slightly less important than during the previous summer, averaging about 21 per cent and with another tachinid fly, *Compsilura concinnata*, the most abundant parasite. In connection with these figures on parasitization of hibernating and large brown-tail moth larvae it must of course be remembered that there is a repetition in the case of *Sturmia nidicola*. Its maggots, while found in the hibernating larvae, do not become full grown until the larvae are large.

Data gathered during the fall of 1933 further indicate the importance of one introduced parasite, *Apanteles solitarius* Ratz., as an enemy of the satin moth. Observations made in 15 towns in Maine, New Hampshire, and Massachusetts

showed that from 14.5 per cent to 66.7 per cent of the hibernating larvae were parasitized by it. In 12 of the 15 towns the percentage of parasitization was above 40.

Collections of cocoons of the oriental moth made in Boston and vicinity in the fall of 1933 and examined to ascertain to what extent the larvae within them were parasitized by the tachinid fly, *Chaetexorista javana* B. & B., introduced from Japan in 1929 and 1930, showed a higher percentage of parasitization than in previous years. Of the 2,262 larvae examined, 63.53% were killed by the fly. The percentages of parasitization for the preceding four years, based on similar collections, were 0.78, 8.59, 16.49, and 52.43.

During 1933 parasites of the satin moth, the elm leaf beetle, the European pine shoot moth, and the larch case bearer, were imported from Europe and colonies were put out in Massachusetts and in other states. The species liberated are not known to occur in the United States. None are known to have been established as a result of recent liberations but it is as yet too soon to make a definite statement in this connection.

FEDERAL GYPSY MOTH AND BROWN-TAIL MOTH WORK IN MASSACHUSETTS

By A. F. Burgess

The Federal Quarantines on account of the gypsy moth, the brown-tail moth and the satin moth have remained unchanged. In general there have been somewhat fewer shipments than last year of materials which have to be inspected and certified before being transported to points outside of the quarantined area.

For the entire state of Massachusetts there was a 20 per cent decrease in the number of acres of woodland defoliated by the gypsy moth, as compared with last year. In Barnstable, Bristol and Plymouth Counties, which were the most heavily infested of any counties last year, there was over a 30 percent decrease in the number of acres of woodland suffering defoliation. All towns in these three counties, however, did not show decreased defoliation, some of them showed decided increases. More extensive defoliation than last year was noted in Norfolk and Middlesex Counties. Last year no defoliation was recorded from Worcester County but this year areas of heavy feeding were found in a number of towns. Some defoliation was discovered, also, in a single town of each of the three more western counties, Franklin, Hampshire and Hampden. The entire infested area in New England showed nearly a 40 per cent increase in extent of defoliated areas, with New Hampshire being responsible for most of this increase as the total for that state was far greater than that recorded for last year. Last year because of the discovery of a dangerous gypsy moth infestation in Pennsylvania, funds had to be diverted from the Barrier Zone to begin work in that State. This year funds were reduced and the prospects for satisfactory work were not very encouraging. Late in August control work in the Barrier Zone and in towns east of it to the Connecticut River was authorized under the National Recovery Act. For the towns between the Barrier Zone and the Connecticut River there is a cooperative arrangement between the State Department of Conservation, the local town moth departments, and the Federal Office, whereby the towns perform their usual amount of control work and the Federal forces confine their efforts to woodland areas, which are not readily accessible to the town forces. Funds thus made available permitted expansion in the plan of work and the employment of many additional men who were secured through the National Reemployment Service. Scouting has been performed in a number of towns in the zone and east of it, particularly in the highland sections which are nearly inaccessible during severe winter weather. Many thousands of acres of woodland have been scouted, and a number of new infestations found and treated.

In addition to the work under National Recovery Act authorization, control work was undertaken in towns west of the Connecticut River by men from the Civilian Conservation Corps camps. This work is being done in close cooperation with the State Department of Conservation. Experienced gypsy moth men were assigned as foremen to ten camps in Massachusetts and crews under their direction have scouted many thousand acres of woodland in towns in the vicinity of the camps. Some badly infested areas have been discovered and treated.

Records of defoliation made last summer and egg clusters found this fall indicate that gypsy moth infestation is heavier than ever before in much of the area west of the middle of Worcester County and moreover that it is on the increase in many parts of that area.

The brown-tail moth has been found in a few towns in Massachusetts beyond the area under quarantine. In Maine and New Hampshire quite a number of towns outside of the quarantined area have been found to be infested and the insect has likewise spread into Vermont. Generally towns in Massachusetts are not more than lightly infested with brown-tail moths but some areas of heavy infestation have been found.

There is no record that the satin moth has spread, in Massachusetts, beyond the quarantined area. Defoliation by this insect was not particularly severe, the heaviest feeding recorded was from a town in Barnstable County

REPORT OF THE STATE FIRE WARDEN

MR. SAMUEL A. YORK, *State Forester*.

SIR: — In compliance with the provisions of section 26, chapter 48 of the General Laws, I submit herewith a report of the work accomplished by this branch of the division during the past year.

This year has been the most favorable forest fire year that we have experienced in over twenty years. Throughout the months of April and May, which are generally serious forest fire months, we had sufficient rainfall distributed over the state to make it possible to hold our areas burned over and losses to a minimum. During the year we had 893 fires and our area burned over was 10,467 acres with a damage cost of \$27,404 with a cost to extinguish of \$21,084.

During the fall months when frequently in past years we have been obliged to go to the extreme and close the forests to the public, prohibiting all fishing and hunting owing to severe drought, this year we experienced the other extreme and not a fire of any consequence occurred.

During the month of December 1932 forest warden meetings were held in North Reading, Mansfield, Stow, Oxford, Athol, Westfield, Shelburne Falls, Great Barrington and Adams. These meetings were largely attended by forest wardens and selectmen and, I believe, were the most instructive and interesting conferences that we have ever held. This department was represented at all the meetings by Chief Forester Harold O. Cook, State Fire Warden M. C. Hutchins, Assistant State Fire Warden John P. Crowe and the various district men.

We have recently purchased Telegraph Hill, so-called, in Sandwich where I hope to erect a forest fire lookout station this coming year. This location is the highest point of land on Cape Cod and an observer at this point will cover a wide range of forest land including our State holding of over 8,000 acres which practically adjoins this tower lot.

The forest fire prevention and fire control work accomplished by the boys in the C. C. C. camps will certainly be an asset in our forest fire work. They have constructed many miles of woods roads making them passable for fire trucks. In addition they have constructed water basins, and made it possible for us to get to isolated ponds and streams all of which will add greatly to our fire protective system.

Again this year we have received the hearty cooperation of the ten forest warden organizations located in central and eastern Massachusetts. These organizations now have a membership of nearly 2,000 men. This membership consists of forest wardens and their deputies together with many timberland owners and men interested in conservation work. The work carried on by these various organizations is certainly very gratifying and I desire at this time to extend to the officers and members my sincere appreciation of their cooperation and the loyal support given this department at all times.

The popularity of our observation towers increases annually and this year thousands of people from every state in the Union and many foreign countries have availed themselves of the opportunity of visiting them and enjoying the wonderful panoramic views. These towers are all equipped with stairs and in many instances it is possible to motor right to the base of them or to a comparatively short sightly trail walk that leads to them.

In carrying on our recreational program fireplaces [have] been constructed and tables placed at many of our eastern towers. They have been well patronized and enjoyed by the general public and I am in hopes that we may add several more to the list this coming year.

The Barnstable County Patrol was continued again this year with good results. Two patrolmen were on duty during the season traveling 28,485 miles and interviewing 5,764 persons. They apprehended 17 violators of the fire laws and attended 39 fires.

Owing to the large numbers of fires from incinerators, so-called, a bill was filed with the General Court defining a practical fire-proof incinerator with the hopes that it might become a law. This bill was endorsed by the various forestry organizations but was finally referred to the next annual session. We hope to have it enacted during the next session of the General Court.

We have again received the hearty cooperation of Mr. C. R. Tillotson, District Inspector of the Federal Forest Service. The allotment for the year under the Clark-McNary law was \$29,744.12.

During the summer and fall months we carried on our usual amount of construction, painting and telephone line work. Many of our towers were repainted, telephone lines rebuilt and repairs were made to many of the roads leading to the towers. During the winter months a large number of tables were made for our various camping grounds, State Forest signs were refinished and repainted, together with a general overhauling of our trucks and forest fire fighting equipment.

We certainly appreciate the cooperation we have received from the Boston Weather Bureau and from Mr. E. B. Rideout of WEEI and Mr. E. J. Rowell of WBZ in their broadcasting the fire weather reports, together with special information that we desire to send out at various times. This service is appreciated by the forest wardens throughout the state as well as by this department.

I wish to extend to the men associated with me in carrying on the fire work and to the men in charge of our State Forests my sincere appreciation for their loyal support and cooperation.

The following tables show the comparative damages, costs, etc., for the past three years.

Respectfully submitted,

M. C. HUTCHINS,
State Fire Warden.

FOREST FIRES FOR THE PAST THREE YEARS

Year	Number of fires	Acreage burned	Cost to extinguish	Damage	Average acreage per fire	Average damage per fire
1931	1,195	19,510	\$34,629.00	\$96,877.00	16.33	\$81.07
1932	1,293	23,783	43,260.00	90,568.00	18.39	70.04
1933	893	10,467	21,084.00	27,404.00	11.72	30.68

TYPES OF CLASSIFIED DAMAGES

	1932	1933
Standing trees, merchantable	\$34,096.00	\$10,895.00
Standing trees, not merchantable	18,622.00	8,863.00
Sproutland	9,363.00	4,293.00
Lumber and cordwood	13,100.00	2,543.00
Buildings and improvements	15,387.00	810.00
Total	\$90,568.00	\$27,404.00

TYPES OF LAND BURNED OVER (ACRES)

	1932	1933
Timber	3,477	2,258
Timber, not merchantable	8,955	3,114
Brush land	9,363	4,293
Grass land	1,988	802
Total	23,783	10,467

FOREST FIRES FOR THE YEAR 1933

Months 1932	Number of fires	Acreage burned	Cost to extinguish	Damage
December	48	576	\$708.00	\$1,061.00
1933				
January	19	38	104.00	302.00
February	19	38	114.00	29.00
March	62	143	450.00	229.00
April	204	1,840	3,386.00	3,541.00
May	380	7,354	14,101.00	20,553.00
June	31	70	390.00	149.00
July	61	229	1,059.00	852.00
August	26	120	385.00	363.00
September	4	2	15.00	—
October	8	13	61.00	23.00
November	31	44	311.00	302.00
Total	893	10,467	\$21,084.00	\$27,404.00

CLASSIFIED CAUSES OF FOREST FIRES, 1932-1933

	1932		1933	
	Number	Per Cent	Number	Per Cent
Railroad	88	6.80	49	5.48
Smokers	418	32.33	370	41.43
Unknown	252	19.49	120	13.44
Brush burning	194	14.85	105	11.76
Incendiary	132	10.21	126	14.11
Children	147	11.37	80	8.96
Other causes	62	4.95	43	4.82
Total	1,293	100.00	893	100.00

APPENDIX

FINANCIAL STATEMENT OF RECEIPTS AND EXPENDITURES FOR YEAR ENDING
NOVEMBER 30, 1933

Purpose of Appropriation	Amount	Balances and Transfers	Net Expenditures	Balance to 1934	Balance to Treasury
Salary of Commissioner	\$5,400.00	—	\$5,201.67	—	\$198.33
Expenses of Commissioner	600.00	—	434.38	—	165.62
Administration — Services	1,850.00	—	1,836.00	—	14.00
Administration — Expenses	2,640.00	—	2,666.08	—	Def. 26.08
Personal Services	11,340.00	—	10,672.05	—	667.95
Office Incidentals	8,000.00	—	7,999.55	—	.45
General Forestry and Nurseries	11,810.00	—	11,773.98	—	36.02
Reforestation of Lands	500.00	—	161.13	—	338.87
Maintenance of State Forests	18,360.00	—	15,260.70	—	3,099.30
Prevention of Forest Fires	46,235.00	—	46,234.99	—	.01
Protection against Forest Fires	750.00	{ 1.64 361.26 (Def. Bill)	1,678.98	—	Def. 566.08
Reimbursement for Fighting Forest Fires	300.00	—	290.63	—	9.37
Suppression of Gypsy and Brown- Tail Moths	44,760.00	300.64	43,132.18	1,928.46	—
Purchase and Development of State Forests	131,450.00	377.33	126,815.98	5,011.35	—
Maintenance of Standish Monument	1,900.00	—	1,899.96	—	.04
Maintenance of Salisbury Beach	4,200.00	—	3,432.64	—	767.36
Maintenance of Mount Grace	400.00	—	399.25	—	.75
Salisbury Beach Land	50,000.00	—	32,339.80	—	17,660.20*
Special — Forest Lands Improve- ments	75,000.00	—	74,999.29	—	.71
Forest Fire Patrol — Barnstable County	2,880.00	24.59	2,549.89	—	334.70
Federal Forestry Fund — Nurseries	2,321.21	2,899.42	4,864.48	356.15	—
Federal Forestry Fund — Fires	29,744.12	9,083.57	32,914.75	5,912.94	—
Division of Parks:					
Services	2,940.00	—	2,872.82	—	67.18
Expenses	1,600.00	2.46	1,040.43	—	562.03
	\$454,980.33	\$13,050.91	\$431,471.61	\$13,208.90	\$23,350.73

**STATEMENT OF EXPENDITURES AND RECEIPTS ON STATE FORESTS FOR THE YEAR
ENDING NOVEMBER 30, 1933**

Name of Forests	Planting Nursery	General Upkeep, Fire Lines, Roads Brushing	Surveying Titles	Land	Total	Receipts
Arthur Warton Swann	\$111.50	\$1,248.46	—	—	\$1,359.96	\$70.00
Ashburnham	60.75	1,683.09	\$27.00	—	1,770.84	7.00
Barre	13.50	50.50	—	—	64.00	66.00
Bash Bish	—	—	—	—	—	—
Beartown	41.40	1,987.97	18.78	—	2,048.15	25.00
Becket	—	—	85.00	—	85.00	—
Boxford	—	—	209.81	\$2,500.12	2,709.93	21.00
Brimfield	—	434.97	112.62	461.90	1,009.49	—
Campbell's Falls	—	—	—	—	—	—
Chester-Blandford	92.48	4,015.28	337.43	755.00	5,200.19	—
Clarksburg	4.28	4.27	7.24	200.00	215.79	5.00
Colrain	14.10	—	12.04	200.00	226.14	—
Conway	—	—	—	—	—	—
D. A. R.	18.45	1,457.33	—	—	1,475.78	154.25
Erving	247.47	3,416.30	138.06	540.00	4,341.83	81.00
Federation of Women's Clubs	—	159.84	46.76	1,839.20	2,045.80	—
Foxborough	—	1,486.94	165.49	67.50	1,719.93	—
Harold Parker	—	3,946.60	1,162.84	2,160.29	7,269.73	158.50
Hawley	—	—	—	—	—	—
Hopkinton	6.75	—	—	—	6.75	25.00
Hubbardston	57.60	1,369.50	21.60	—	1,448.70	—
Huntington	—	—	—	—	—	—
Leominster	27.00	1,526.61	—	—	1,553.61	109.50
Marlborough	—	—	—	—	—	—
Marthas Vineyard	225.85	5,170.24	31.67	66.25	5,494.01	90.00
Mohawk Trail	47.03	1,871.58	428.39	—	2,347.00	66.21
Monroe	—	153.90	—	—	153.90	—
Mount Grace	—	363.53	—	—	363.53	10.00
Myles Standish	523.55	8,676.38	307.28	—	9,507.21	1,977.25
Nantucket	—	—	—	—	—	—
Northfield	—	—	—	—	—	—
Oakham	—	2,517.49	109.50	266.25	2,893.24	129.50
October Mountain	92.48	11,099.97	85.00	409.43	11,686.88	455.00
Otis	—	818.11	526.85	65.00	1,409.96	25.00
Otter River	183.42	2,710.15	—	—	2,893.57	61.50
Oxford	—	—	—	—	—	—
Peru	—	—	44.50	—	44.50	—
Petersham	—	4.50	7.20	* - 163.20	—151.50	—
Pittsfield	13.00	—	98.99	2,950.75	3,062.74	—
Royalston	—	—	12.00	—	12.00	—
Sandisfield	—	328.98	259.87	—	588.85	—
Savoy Mountain	35.76	551.22	829.75	1,800.00	3,216.73	130.50
Shawme	588.43	3,920.48	51.20	85.00	4,645.11	86.25
Shutesbury	—	—	21.60	* - 476.00	—454.40	—
Spencer	—	3,123.95	—	—	3,123.95	8.70
Sutton	—	141.20	—	—	141.20	—
Templeton	36.00	97.20	32.40	—	165.60	—
Tolland-Granville	195.60	2,565.78	187.55	—	2,948.93	52.00
Warwick	25.20	733.35	10.80	—	769.35	40.00
Wendell	105.95	2,926.64	401.39	—	3,433.98	130.50
West Brookfield	—	80.00	—	—	80.00	15.00
Westminster	—	—	84.00	—	84.00	—
Willard Brook	32.40	3,692.50	187.20	—	3,912.10	80.75
Windsor	—	24.30	—	—	24.30	—
Worthington	—	40.00	—	—	40.00	—
Total	\$2,799.95	\$74,399.11	\$6,061.81	\$13,727.49	\$96,988.36	\$4,080.41

*Exchange of land in this forest caused a net deduction this year in the cost of total land in forest.

<i>Additional State Lots</i>						
Bridgewater	—	670.75	—	—	670.75	—
Lancaster	—	—	—	—	—	2.00
North Brookfield	—	168.07	—	—	168.07	—
Sandwich	—	58.05	—	—	58.05	—
Yarmouth	—	33.55	—	—	33.55	—
Total	—	\$930.42	—	—	\$930.42	\$2.00

Receipts, 1933

For cord wood	\$1,105.95
“ hay and stone	9.50
“ lumber	328.75
“ camp sites	1,825.00
“ receipts at Standish Monument	557.16
“ “ Mohawk Trail	27.21
“ rentals	761.00
“ sale and exchange of land	375.00
“ trees sold	3,258.10
“ examinations	3.50
“ income u/w L. M. Standish	150.83
“ forest fire supplies, etc.	203.50
“ reimbursement from Barnstable County	1,385.17
“ gypsy moth supplies	105.36
“ interest on bank account	33.64
“ books and maps sold	47.30
“ Federal Forestry Fund	32,065.33
	<hr/>
	\$42,242.30

THE DISTRIBUTION OF SUPPLIES

Supplies have been furnished as usual for Gypsy Moth Work to such towns as we could assist with our limited appropriation. We have also purchased supplies for forestry and forest fire work.

List of Supplies furnished in 1933

Berkley	\$194.69	Lynnfield	\$157.55
Berlin	179.75	Mashpee	187.71
Bolton	247.35	Middleton	109.01
Boxborough	337.53	Newbury	303.63
Boxford	122.37	North Reading	247.83
Boylston	160.76	Norwell	234.95
Brewster	278.53	Pembroke	388.65
Chilmark	227.20	Plainville	100.26
Dennis	439.80	Plympton	180.73
Dunstable	256.69	Rowley	343.20
Eastham	174.22	Sandwich	729.66
Freetown	203.18	Sterling	26.40
Georgetown	251.49	Tyngsborough	105.56
Halifax	379.60	West Bridgewater	267.06
Lakeville	131.05	West Newbury	131.78
Lunenburg	354.04	West Tisbury	289.23

\$7,741.46

Automobile Supplies	420.52
Commissioner's Travel	10.28
General Forestry and Nurseries	20.32
Maintenance of State Forests	55.10
North Shore Special Work	2.36
Prevention of Forest Fires	213.34
Purchase and Development of State Forests	339.94
Special, Forest Lands Improvements	40.20
Cambridge Shop	95.27
Trucks	99.96
Fish and Game Division	20.70

\$9,059.45

STATEMENT OF EXPENDITURES AND REIMBURSEMENTS OF TOWNS AND CITIES FOR
THE YEAR ENDING NOVEMBER 30, 1933, ON ACCOUNT OF GYPSY MOTH WORK

Cities and Towns	1933						1934
	Required Expendi- ture	Total Net Expendi- ture	Private Work	Reimburse- ment	Supplies Furnished	Total Amount Received from State	Required Expendi- ture
Berkley	\$360.84	\$761.78	\$128.00	\$399.90	\$194.69	\$594.59	\$360.84
Berlin	427.60	527.68	{ 75.55 29.85*	100.00	179.84	279.84	427.60
Bolton	493.55	569.62	{ 25.00 161.78*	76.07	247.35	323.42	493.55
Buxborough . . .	150.71	150.71	301.24	—	337.53	337.53	150.71
Boxford	461.38	894.40	207.00	393.80	122.37	516.17	461.38
Boylston	371.90	672.33	{ 154.60 44.36*	300.30	160.76	461.06	371.90
Brewster	868.41	1,124.04	{ 225.50 15.40*	255.63	278.53	534.16	868.41
Chilmark	284.78	1,068.94	—	784.16	227.20	1,011.36	284.78
Dennis	1,410.71	1,892.52	9.60*	350.00	439.80	789.80	1,410.71
Dunstable	189.86	289.96	{ 98.32 148.32*	100.10	256.69	356.79	189.86
Eastham	502.26	749.70	36.00	150.00	174.22	324.22	502.26
Freetown	675.44	975.04	200.20	299.60	203.18	502.78	675.44
Georgetown . . .	763.95	1,073.43	660.75	250.00	251.49	501.49	763.95
Halifax	639.17	908.68	{ 413.44 9.08*	299.75	379.60	679.35	639.17
Lakeville	569.84	570.71	223.50	—	131.05	131.05	569.84
Lunenburg	933.37	1,371.77	622.18	200.20	354.04	554.24	933.37
Lynnfield	1,479.23	1,729.24	333.02	250.01	157.55	407.56	1,479.23
Mashpee	346.35	791.07	58.86	349.93	187.71	537.64	346.35
Middleton	800.77	1,125.76	—	324.99	109.01	434.00	800.77
Newbury	909.50	1,009.70	355.88	99.20	303.63	402.83	909.50
North Reading . .	971.39	1,471.72	709.00	397.00	247.83	644.83	971.39
Norwell	865.73	886.95	994.13	—	234.95	234.95	865.73
Oakham	181.08	282.20	33.20	200.40	—	200.40	181.08
Pembroke	1,195.65	1,325.82	{ 240.25 2.00*	130.17	388.65	518.82	1,195.65
Phillipston	150.70	551.05	21.75	345.30	—	345.30	150.70
Plainville	696.05	1,253.05	106.00	557.00	100.26	657.26	696.05
Plympton	297.84	503.11	97.50	150.40	180.73	331.13	297.84
Rowley	569.42	970.03	{ 382.92 187.30*	400.25	343.20	743.45	569.42
Sandwich	1,137.50	1,341.82	104.00*	201.60	729.66	931.26	1,137.50
Sterling	762.54	762.78	—	—	26.40	26.40	762.54
Tyngsborough . . .	501.72	701.82	{ 313.80 24.10*	200.00	105.56	305.56	501.72
West Bridgewater .	1,312.74	1,575.65	379.40	250.00	267.06	517.06	1,312.74
West Newbury . . .	448.30	569.80	40.00	97.80	131.78	229.58	448.30
West Tisbury . . .	377.55	1,310.41	113.00	932.86	289.23	1,222.09	377.55

*Lead sold.